

IMPAX 6.3

AS300 Installation Guide

Installing IMPAX in a Single-Host, Multi-Host,
or Mixed-Host Configuration

Upgrading IMPAX from a Single-Host
to Multi-Host Configuration



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Manufacturer's responsibility

The manufacturer, installer, or importer will be responsible for safety, reliability, and performance of the equipment only if:

- Installation, modifications, adjustments, changes, or repairs are performed by suitably qualified service personnel.
- The electrical installation of the site in which the equipment is used is according to an applicable safety standard (UL, CSA, or IEC/CDE).
- The equipment is used according to the instructions provided in the operation manuals.

Additional documentation

This guide is intended for service and administrative personnel who are installing or upgrading, configuring, and maintaining the server components of the IMPAX 6.3 system.

For information about using the IMPAX software once it is installed, refer to the *IMPAX 6.3 Server Knowledge Base*, *IMPAX 6.3 Application Server Knowledge Base*, and *IMPAX 6.3 Client Knowledge Base*. These Knowledge Bases are installed on the Application Server. Refer to *Installing the IMPAX documentation* in Chapter 3 of the *IMPAX 6.3 Application Server Installation and Upgrade Guide*.

To open the IMPAX 6.3 Server Knowledge Base

1. Ensure that the IMPAX documentation has been installed, and that you know the name of the Application Server it is installed on.
2. In a browser, navigate to:
`https://<app_server_name>/impax/documents/server/default.htm`

To open the IMPAX 6.3 Application Server Knowledge Base

1. Ensure that the IMPAX documentation has been installed.
2. On the Application Server, double-click the **IMPAX 6.3 Application Server Knowledge Base** desktop shortcut.

or

From a browser on a connected computer, navigate to
`https://<app_server_name>/impax/documents/appserver/default.htm`

To open the IMPAX 6.3 Client Knowledge Base

1. Ensure that the IMPAX documentation has been installed.
2. Launch the IMPAX Client application and log in.
3. Press **F1**.

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Getting started

1

For successful installation of IMPAX, servers must meet certain hardware and software requirements. The IMPAX cluster can also be installed under different configurations.

Prerequisite knowledge

The installation procedures require that you have general knowledge of computer hardware and software concepts and proficiency in operating and troubleshooting computer software.

What is IMPAX?

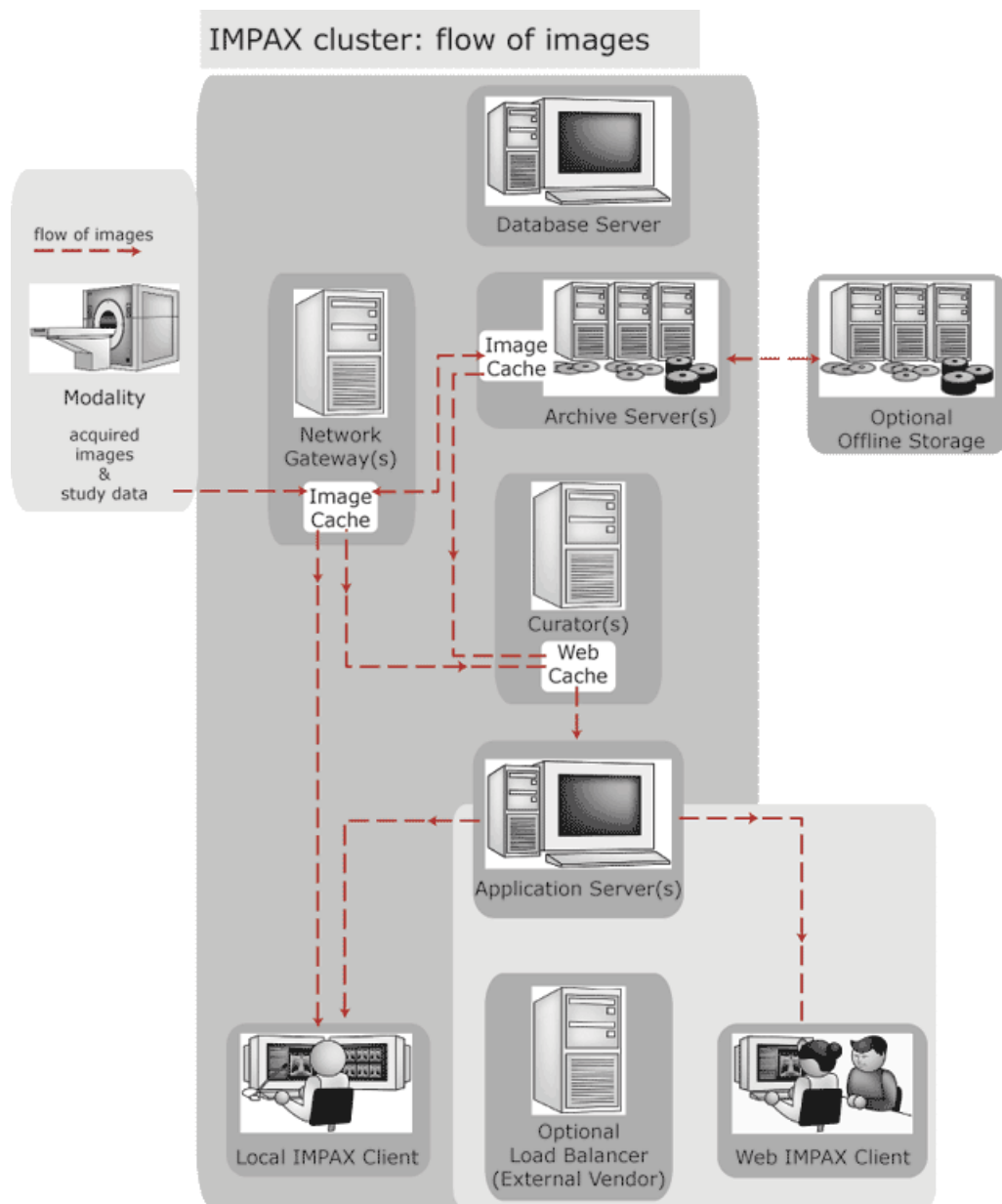
IMPAX is an image archiving and communications system that eliminates the need for film because it receives, distributes, archives, and displays images. IMPAX automates the flow of information to integrate the Radiology department with the rest of the hospital. IMPAX can also integrate remote locations such as clinics or home offices to the system for offsite viewing of images.

Multi-cluster configurations

IMPAX 6.3 builds on the IMPAX 6.0 foundation to deliver multi-site functionality, which provides a patient-centric view across hospitals within several sites. This view is delivered by extending the scope of study query, study retrieval, and data synchronization from a single hospital site to several hospital sites that have multiple patient domains (multiple RISs) in one or more IMPAX clusters.

Central to the multi-site configuration is the Data Center component. The Data Center provides storage for studies through the Archive Server, as well as retrieval of the study data. Connected to the Data Center are a collection of hospital groups known as entities, each with a local PACS infrastructure. Most entities use IMPAX as their PACS system.

The relationship between the Data Center and the various clusters is characterized as a hub and spoke. The Data Center (hub) serves or archives data from the entities, known as spokes.



Order of cluster installations

The IMPAX cluster has many components and each depends on other components in the cluster. To correctly install and configure components in the cluster, follow this order of installation:

1. **Install the Database Server, Archive Server, and Network Gateway.**

Install the core Server components and create the portable password file required to install other IMPAX components. Do not configure the Server components at this time; the Application Server must be installed before the Server components can be configured. Refer to the guide appropriate to your configuration.

Required guide: One of *IMPAX 6.3 AS3000 Installation and Configuration Guide* or *IMPAX 6.3 AS300 Installation Guide*

2. Install the Application Server.

Install the Business Application services and IMPAX Knowledge Bases on the Application Server.

Required guide: *IMPAX 6.3 Application Server Installation and Upgrade Guide*

3. Begin configuration of the Application Server.

Create and import an SSL certificate, configure ADAM, compress web services, set connections to the image and audit servers, and set logging levels.

Required guide: *IMPAX 6.3 Application Server Configuration Guide*

4. If you have installed a Windows-based Database Server, Archive Server, or Network Gateway, configure these components.

Configure database backups, image and web caches, and archives (if necessary). In clusters that include only Solaris-based systems, these configuration steps are done automatically during the installation.

Required guide: *IMPAX 6.3 AS300 Configuration Guide*

5. Install and configure Curator and the CD Export server.

If the site requires compressed web images, install and configure one or more Curator systems and set up the web cache. If you are installing multiple Curators, install and start the master Curator first, then install and start the slave Curators.

If you will be using the CD Export feature in the IMPAX Client, install the CD Export server .

Required guide: *IMPAX 6.3 Curator and CD Export Server Installation Guide*

6. Complete the configuration the Application Server

Connect to the IMPAX database, and complete the remaining configuration tasks.

Required guide: *IMPAX 6.3 Application Server Configuration Guide*

7. Install and configure Clients.

Install and configure the IMPAX Client, the PACS system used to access images.

Required guide: *IMPAX 6.3 Client Installation and Configuration Guide*

If installing a standalone station (single-host AS300 with Application Server and Client), refer to the *IMPAX 6.3 Standalone Installation, Upgrade, and Configuration Guide*.

If installing a single-server (single-host AS300 with Connectivity Manager and Application Server), refer to the *IMPAX 6.3 Single-Server Installation and Configuration Guide*.

All documentation is available on the IMPAX Documentation CD.

Understanding the AS300 cluster components

Every IMPAX 6.3 AS300 installation comprises the following main components:

- Database Server hosting the SQL database
The database used by the IMPAX 6.3 AS300 cluster. It collects, organizes, and manages all patient and study demographic data that is contained in DICOM header files.
- Network Gateway
Workflow manager of the IMPAX 6.3 AS300 cluster. It receives studies from modalities and provides DICOM security and validation. Installation and configuration of a Windows-based Network Gateway is covered in this guide.
- Archive Server
DICOM archive used for permanent storage and retrieval of studies. This component runs on a Windows server. Installation and configuration of a Windows-based Archive server is covered in this guide.
- Application Server
Clients connect to one or more Application Server machines, which act much like a proxy machine to handle security, authentication, and communication with the IMPAX 6.3 Server components. Installation and configuration details are covered in the *IMPAX 6.3 Application Server Installation and Upgrade Guide* and *IMPAX 6.3 Application Server Configuration Guide*.
- Curator
Clients can view JPEG compressed or wavelet compressed DICOM images generated by the Curator. Installation and configuration details are covered in the *IMPAX 6.3 Curator and CD Export Server Installation Guide*.
- Clients—Local and Remote
Multi-modality diagnostic or clinical display station for viewing images and diagnosing studies. Installation and configuration details are covered in the *IMPAX 6.3 Client Installation and Configuration Guide* and the *IMPAX 6.3 Client Configuration Guide*.

Also possible is installing all components on one Windows computer—the standalone configuration. That option is covered in the *IMPAX 6.3 Standalone Installation, Upgrade, and Configuration Guide*.

Another possible configuration is when all components other than Clients are installed on one computer, along with the Connectivity Manager software and database—the single-server configuration. This option is covered in the *IMPAX 6.3 Single-Server Installation and Configuration Guide*.

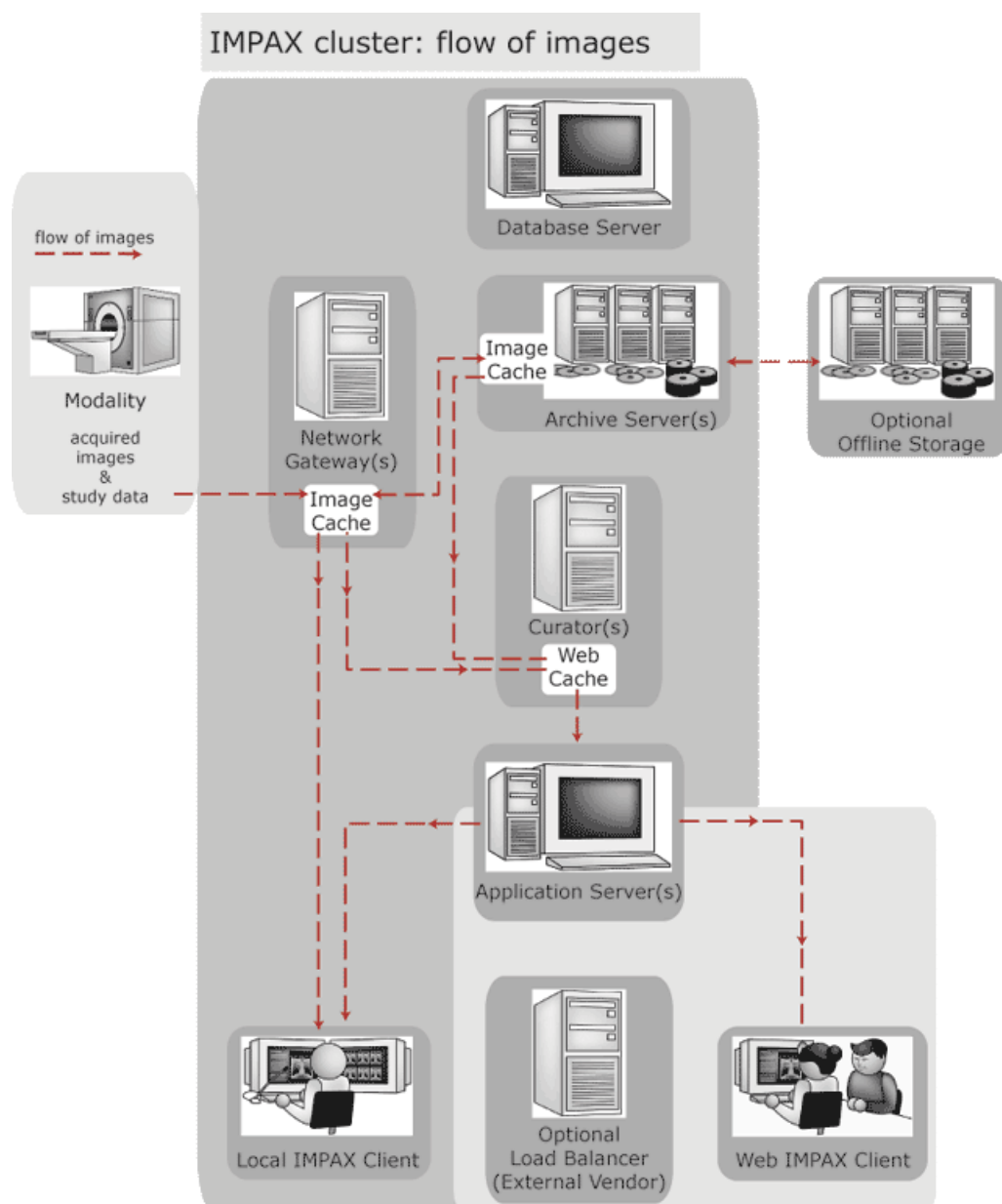
The sum of these components is called the *cluster*. The IMPAX 6.3 AS300 cluster is the set of core IMPAX 6.3 AS300 components that run on the Windows operating system and are controlled by one SQL database. The Database Server must be installed first because the other stations must connect to the SQL database.

Understanding cluster configuration options

Database, Archive, and Network Gateway components can all be installed on one “box” or station. This is called a single-host configuration. For larger sites, each component may have its own station. This is known as a *multi-host configuration*. By loading the IMPAX 6.3 Server software modules onto separate stations, workflow volume is better managed and system performance enhanced. An intermediary option is to install the Database Server on one station, and the Network Gateway and Archive Server together on another station.

Another possibility is to combine an AS3000 Database Server with an AS300 (Windows-based) Archive Server and Network Gateway. This is called a *mixed-host* configuration.

The Curator, Application Server, and Client components must be installed on the Windows operating system.



IMPAX AS300 Server hardware and software requirements

The following lists the hardware and software requirements for an IMPAX AS300 Server (including single-server configurations). Where a specific manufacturer is identified, only that manufacturer's device is supported.

External software requirements

The following software is required for all IMPAX AS300 Servers (including single-server configurations). Unless otherwise indicated, Agfa does not provide the software as part of the IMPAX AS300 Server installation package.

Component	Requirements
Operating system	Windows 2003 Server R2, Standard or Enterprise Editions
Database software	If connecting to an AS300 Database Server: <ul style="list-style-type: none">• Microsoft SQL Server 2000, Standard or Enterprise Edition• SQL Server 2000 Service Pack 4 If connecting to an AS3000 Database Server: <ul style="list-style-type: none">• Oracle Database 10.2.0.2.0 Client Release 2 for Microsoft Windows (32-bit) (included on the IMPAX AS3000 DVD)
IIS	IIS 6.0 (installed with the operating system)
Browser	Internet Explorer 7.0 (installed with the operating system)
Documentation	Adobe Acrobat Reader 8.0
Remote access	Symantec pcAnywhere version 11
Antivirus	Any commonly available software

Hardware requirements

The following hardware configuration is recommended for IMPAX AS300 servers (including single-server configurations).

Component	Requirements
Example systems	Dell 1900, 2900, 2950, 6900, 6950 Stratus ftServer 4300 or 5700 (dual CPU) HP ML370, ML570
Hard drive	Minimum three drives; minimum drive size 73 GB. NAS/SAN connections also supported.

Component	Requirements
RAM	2 GB minimum
Number of CPUs	Two or four CPUs, 2 GHz minimum each
RAID	Embedded RAID (for onboard storage)
Tape backup	DDS5 tape drive—File system backup also supported
Video	Integrated video
CD-ROM	Yes
Floppy	Yes
Ethernet	100/1000
Modem	V.90 (56K) compatible modem
Power supplies	Redundant
Peripherals	Mouse and keyboard

Additional hardware requirements: Archive and storage requirements

Non-SCSI CD/DVD burner and controller cards

The following controller cards are supported:

- USB 2.0 Internal Bus Port PCI Card Belkin Components
- Promise ULTRA133 TX2 2.Channel ATA/133 PCI-IDE ADPT
- Sony External DVD+RW Drive DRX-530UL
- Sony Internal 52X CD-RW Drive CRX230A/U
- Plextor PlexWriter Premium-U External USB 52x32x52 CDRW
- Plextor PlexWriter 52x24x52 internal ATAPI drive
- Plextor PX708UF External USB/Firewire DVD+ -RW 40x24x40 drive
- LG Electronics GCE8525B 52x24x52 Internal ATAPI CD-Rewritable drive

CD-R archive requirements

Jukeboxes	Model	Speed	Interface
Pioneer	DRM-3000	-	SCSI
Pioneer	DRM-7000	-	SCSI

Drives	Model	Speed	Interface
LG Electronics	GCE-8525B	52/24/52	E-IDE (ATAPI)
Sony	CRX230A/U	52/32/52	E-IDE (ATAPI)
Plextor	PlexWriter 52/24/52	52/24/52	E-IDE (ATAPI)
Plextor	PlexWriter Premium-U	52/32/52	USB

DVD-R archive requirements

DVD-R burning requires a minimum image size of 175 MB.

Jukeboxes	Model	Speed	Interface
Pioneer	DRM-3000	-	SCSI
Pioneer	DRM-7000	-	SCSI

Drives	Model	Speed	Interface
Sony	DRX530UL	40/24/40	IEEE 1394 USB 1.1/2.0
Plextor	PX-708UF	40/24/40	IEEE 1394 USB 1.1/2.0

HSM archive requirements

The following HSM storage devices are supported:

- StorageTek ASM 4.0 for Windows (Legato)
- EMC Avalon
- IBM Tivoli TSM for Windows
- Samba
- QStar

PACS Store and Remember archive requirements

No additional hardware is required.

Storage requirements

Manufacturer	Model	Manufacturer	Model
IBM	Shark ESS Series	HP	MSA1000 series
	FastT Series		EVA series
NetApp	R series	Hitachi	9000 series
	F series		
EMC	CX series	StorageTek (STK)	D series
	DMX series		B series
	Symmetrix		
	Centera		
Dell	PowerVaults		

IMPAX AS300 installation overview

IMPAX 6.3 uses an automated installer to make the installation of packages more straightforward. The installer performs the following functions:

- Installs new packages (such as MVFCache, MVFCore, and so on)
- Copies the license keys under C:\mvf
- Builds the database

The installer logs the sequence of events that take place and stores the information in C:\mvf\data\logs\mitra_install.log. This log file provides information about the following:

- The date and time the package was installed and the name of the person who installed it
- A short description of the operating system, SQL Server, processors, and memory
- All packages that have been installed as a part of the master installer

A second log file containing detailed information about the system is created under C:\mvf\data\logs\SystemInfo.log.

Determining a password for the AgfaService account

During the installation, you are prompted for a password for the AgfaService account. The password must conform to the following requirements:

- The password must be at least eight characters long.
- The password must not contain three or more characters from the user's account name.

- The password must contain characters from at least three of the following five categories:
 - Uppercase characters (A to Z)
 - Lowercase characters (a to z)
 - Digits (0 to 9)
 - Non-alphanumeric characters (for example, !, \$, #, or %) ; avoid commas
 - Unicode characters

AS300 installer packages reference

The IMPAX AS300 installer groups the packages to install under three sections: default, archive, and optional. The following tables explain each package.

Default packages	
MVFCore	Installs the DICOM Services for IMPAX and contains several core Windows services and database tables used by IMPAX.
MVFCache	Installs the DICOM SCU and autopilot services used by IMPAX and spftpd services. MVF cache includes mvf_compressor, used for lossy compression.
MVFSqlserver	Contains the files necessary to build the SQL Server database used by IMPAX.
MVFNetworkGateway	Installs the SCP and APIP-SCP services used by IMPAX. Install this package only on stations that require Network Gateway functionality. Servers that support only internal transfers, not incoming DICOM communications, do not require it.
VaultAgfa	Includes specific requirements and database extensions.
AdministrationTools	Installs the Java Administration Tools application for configuring and managing IMPAX. It also copies the Java Runtime Environment (JRE) self-extracting executable onto the system.
J2RE	Installs the Java Runtime Environment.
MVFOcr	<p>Installs the files necessary to enable Optical Character Recognition. This is an optional installation that works in conjunction with the MVFNetworkGateway package. It should be installed only if your system requires OCR.</p> <p>The OCR package installs default OCR templates to handle many different modality vendors. OCR training tools are not included with IMPAX.</p>

Archive packages	
MVFDvd	Installs the jukebox CD-R/DVD-R package.
MVFScdr	Installs the non-jukebox CD-R/DVD-R package.
MVFhsm	Installs the HSM package.

Archive packages	
MVFjdlr	For upgrades only. Not supported for new installations. Installs the jukebox DLT (digital linear tape) package.
MVFsdlr	For upgrades only. Not supported for new installations. Installs the non-jukebox DLT or single DLT package.

Archiving considerations:

- If the server is used for viewing only (no archiving), do not install any archive packages.
- Install only the archive package that applies to your system configuration.
- PACS Store and Remember archiving is available but does not require an installation package. It does require an archive license. For details on setting up PACS Store and Remember archiving, refer to the *IMPAX 6.3 AS300 Configuration Guide*.

Optional packages	
MVFCompressor	Installs the MVF Compressor package, which includes mvf_compressor_scheduler. The mvf_compressor_scheduler process is responsible for scheduling the lossy compression of images.
MVFScavenger	Installs the Scavenger process. Scavenger copies studies from a source archive to the destination (local) archive. The Scavenger process runs on the destination archive station.
MVFCurator	Installs the Curator package. The Curator process compresses incoming images into Mitra wavelet format and stores them in the web cache. Studies compressed by the Curator process are served locally or over the World Wide Web to display clients.
MVFclexport	Installs the CD Export server, used with the CD Export feature in the IMPAX Client. The CD Export server processes local burn jobs created by the IMPAX Client and prepares the zip files containing the data for the burn job. For instructions on using CD Export, refer to “Exporting and viewing images from CD or DVD” (article ID 8209) in the <i>IMPAX 6.3 Client Knowledge Base</i> .
MVFPap	Installs the PAP package. A PACS Archive Provider (PAP) acts like a Service Class Provider (SCP) by receiving studies and allows sites to have their studies mirrored at another site through PACS Store and Remember archiving. This mirroring protects against loss of data and enables studies at one PACS to be viewed at another. For instructions on configuring a PAP, refer to “Configuring a PACS Archive Provider (PAP)” (article ID 11586) in the Archive Server component of the <i>IMPAX 6.3 Server Knowledge Base</i> .

AS300 installer log files

The installer logs the sequence of events that take place and stores the information in C:\mvf\data\logs\mitra_install.log. This log file provides information about the following:

- The date and time the package was installed and the name of the person who installed it
- A short description of the operating system, SQL Server, processors, and memory
- All packages that have been installed as a part of the master installer

A second log file containing detailed information about the system is created under C:\mvf\data\logs\SystemInfo.log.

Summary of IMPAX AS300 server installation steps

2

Different steps are required to install an IMPAX AS300 Server in different configurations. Details are provided in subsequent chapters.

General installation notes for installing external software

Restart the computer whenever any installation package asks you to do so. For instance, during the restart at the end of the Windows Server 2003 installation, the installation process registers files with Windows and replaces some files. For your installation to work properly, make sure that if you are asked to restart during the install, you do so before proceeding to the next step.

Setting up an AS300 single-host server

In a single-host configuration, Windows-based Database, Archive, and Network Gateway components are all installed on one “box” or station. This is a summary of the steps to follow in setting up a single-host station. You must perform these tasks in the order listed in the table that follows.

☑	Action
	Install Windows Server 2003 R2 software (refer to page 26)
	Configure Windows Server 2003 R2 software (refer to page 28)
	Partition disks appropriately (refer to page 29) for database, volumes, logs, cache, and ghost
	Install and configure video drivers (refer to page 32)
	Install SQL Server 2000 (refer to page 33)

☑	Action
	Install SQL Server 2000 SP4 (refer to page 34)
	Install Symantec Ghost 8, Enterprise Edition (refer to page 35)
	Configure the archive component (refer to page 35)
	Synchronize the server clock (refer to page 37) with an appropriate time server
	Install IIS 6.0 (refer to page 38)
	Using Control Panel, enable Automatic Updates (refer to page 42) for critical Windows updates
	Launch Internet Explorer and enable active content (refer to page 42) for the IMPAX Knowledge Bases
	If an external modem is supplied, install it (refer to page 44)
	Install antivirus software (refer to page 44)
	Install and configure pcAnywhere 11.0 (refer to page 44)
	Install Adobe Acrobat Reader 8 (refer to page 46)
	Obtain license keys (refer to page 46) by emailing Agfa the server MAC address
	Install IMPAX packages (refer to page 48): <ul style="list-style-type: none"> • Default packages • If required, one of the archive packages: MVFjdvd, MVFscdr, or MVFhsm • Any of the optional packages: MVFCompressor, MVFScavenger, MVFCurator, MVFclexport
	Check subpackage installations (refer to page 64) by referring to response files
	Update the SQL Server registration (refer to page 56)
	Change the SQL Server administrator (sa) password (refer to page 65) (optional)
	Enable Data Execution Prevention (DEP) (refer to page 66) for all programs and services
	Install the Application Server (refer to page 68)
	Configure IMPAX Server (refer to page 68)
	Install the IMPAX Server documentation (refer to page 68)
	Configure Curator (refer to page 68) (if installed)

Setting up an AS300 multi-host Database Server

For larger sites, each component may have its own station. This is known as a *multi-host* configuration. An intermediary option is to install the Database Server on one station, and the Network Gateway and Archive Server together on another station.

You must install the hardware and software on the server in the order listed in the table that follows. For more complete instructions, refer to *Installing hardware and software on an AS300 server* (refer to

page 26), *Installing IMPAX on a dedicated AS300 Database Server* (refer to page 52), and *Completing the installation of IMPAX on an AS300 server* (refer to page 65).

☑	Action
	Install Windows Server 2003 R2 software (refer to page 26)
	Activate Windows (refer to page 28)
	Change the Windows Event Viewer (refer to page 28) to overwrite events as necessary
	Configure Windows Explorer (refer to page 28) to show all file information
	Set the Start menu and Control Panel to Classic mode (refer to page 28)
	Partition disks appropriately (refer to page 29) for database and ghost
	Install and configure video drivers (refer to page 32)
	Install SQL Server 2000 (refer to page 33)
	Install SQL Server 2000 SP4 (refer to page 34)
	Install Symantec Ghost 8, Enterprise Edition (refer to page 35)
	Synchronize the server clock (refer to page 37) with an appropriate time server
	Install IIS 6.0 (refer to page 38)
	Using Control Panel, enable Automatic Updates (refer to page 42) for critical Windows updates
	Launch Internet Explorer and enable active content (refer to page 42) for the IMPAX Knowledge Bases
	If an external modem is supplied, install it (refer to page 44)
	Install antivirus software (refer to page 44)
	Install and configure pcAnywhere 11.0 (refer to page 44)
	Install Adobe Acrobat Reader 8 (refer to page 46)
	Obtain license keys (refer to page 46) by emailing Agfa the server MAC address
	Install IMPAX packages (refer to page 52): <ul style="list-style-type: none"> • Default packages: MVFCore, MVFSqlserver, VaultAgfa, AdministrationTools, J2RE, MVFocr • Any of the optional packages: MVFcdexport, MVFCompressor, MVFCurator
	Check subpackage installations (refer to page 64) by referring to response files
	Generate the portable password file (refer to page 56)
	Update the SQL Server registration (refer to page 56)
	Enable Data Execution Prevention (DEP) (refer to page 66) for all programs and services

Setting up an AS300 Archive Server

If you are setting up a dedicated Archive Server, you must install the hardware and software on the server in the order listed in the table that follows. You also have the option of installing the Network Gateway component on the same server. For more complete instructions, refer to *Installing hardware and software on an AS300 server* (refer to page 26), *Installing IMPAX on the Archive Server* (refer to page 58), and *Completing the installation of IMPAX on an AS300 server* (refer to page 65).

☑	Action
	Install Windows Server 2003 R2 software (refer to page 26)
	Activate Windows (refer to page 28)
	Change the Windows Event Viewer (refer to page 28) to overwrite events as necessary
	Configure Windows Explorer (refer to page 28) to show all file information
	Set the Start menu and Control Panel to Classic mode (refer to page 28)
	Partition disks appropriately (refer to page 29) for volumes, logs, cache, and ghost
	Install and configure video drivers (refer to page 32)
	Install Symantec Ghost 8, Enterprise Edition (refer to page 35)
	Configure the archive component (refer to page 35)
	Synchronize the server clock (refer to page 37) with an appropriate time server
	Configure the connection to the Database Server (refer to page 38)
	Using Control Panel, enable Automatic Updates (refer to page 42) for critical Windows updates
	Launch Internet Explorer and enable active content (refer to page 42) for the IMPAX Knowledge Bases
	If an external modem is supplied, install it (refer to page 44)
	Install antivirus software (refer to page 44)
	Install and configure pcAnywhere 11.0 (refer to page 44)
	Install Adobe Acrobat Reader 8 (refer to page 46)
	Obtain license keys (refer to page 46) by emailing Agfa the server MAC address
	Install IMPAX packages (refer to page 58): <ul style="list-style-type: none">• Default packages: MVFCore, MVFCache, MVFNetworkGateway• If required, one of the archive packages: MVFjdvd, MVFscdr, or MVFhsm• Any of the optional packages: MVFclexport, MVFCurator, MVFScavenger
	Check subpackage installations (refer to page 64) by referring to response files
	Configure Data Execution Prevention (DEP) (refer to page 66)

☑	Action
	Install the Application Server (refer to page 68)
	Configure IMPAX Server (refer to page 68)
	Install the IMPAX Server documentation (refer to page 68)
	Install and configure Curator (refer to page 68)

Setting up an AS300 Network Gateway

If you are setting up a dedicated Network Gateway server, you must install the hardware and software on the server in the order listed in the table that follows. For more complete instructions, refer to *Installing hardware and software on an AS300 server* (refer to page 26), *Installing IMPAX on the Network Gateway* (refer to page 62), and *Completing the installation of IMPAX on an AS300 server* (refer to page 65).

☑	Action
	Install Windows Server 2003 R2 software (refer to page 26)
	Activate Windows (refer to page 28)
	Change the Windows Event Viewer (refer to page 28) to overwrite events as necessary
	Configure Windows Explorer (refer to page 28) to show all file information
	Set the Start menu and Control Panel to Classic mode (refer to page 28)
	Partition disks appropriately (refer to page 29) for logs, cache, and ghost
	Install and configure video drivers (refer to page 32)
	Install Symantec Ghost 8, Enterprise Edition (refer to page 35)
	Synchronize the server clock (refer to page 37) with an appropriate time server
	Configure the connection to the Database Server (refer to page 38)
	Using Control Panel, enable Automatic Updates (refer to page 42) for critical Windows updates
	Launch Internet Explorer and enable active content (refer to page 42) for the IMPAX Knowledge Bases
	If an external modem is supplied, install it (refer to page 44)
	Install antivirus software (refer to page 44)
	Install and configure pcAnywhere 11.0 (refer to page 44)
	Install Adobe Acrobat Reader 8 (refer to page 46)
	Obtain license keys (refer to page 46) by emailing Agfa the server MAC address
	Install IMPAX packages (refer to page 62): <ul style="list-style-type: none"> • Default packages: MVFCore, MVFCache, MVFNetworkGateway • Any of the optional packages: MVFcdexport, MVFCurator

☑	Action
	Check subpackage installations (refer to page 64) by referring to response files
	Configure Data Execution Prevention (DEP) (refer to page 66)

Upgrading IMPAX from an AS300 single-host configuration to an AS300 multi-host configuration

To realize greater workflow volume and enhanced system performance, you may decide to upgrade your IMPAX system from a single-host to multi-host configuration. Perform the database backup, the installs, and the uninstalls in the order listed in the table that follows.

☑	Action
	Perform the pre-upgrade procedures including backing up the database on the original server (refer to page 69). Refer to <i>Preparing to upgrade from a single-host to multi-host configuration</i> (refer to page 69).
	Install the hardware and software on the new Database Server (refer to page 26). Refer to <i>Installing hardware and software on an AS300 server</i> (refer to page 26).
	Install IMPAX on the new Database Server including restoring the database and MVF services (refer to page 52). Refer to <i>Installing IMPAX on a dedicated AS300 Database Server</i> (refer to page 52).
	Install the IMPAX Archive Server packages on the original server (refer to page 58). Refer to <i>Installing IMPAX on the Archive Server</i> (refer to page 58).
	If required, install hardware and software on the dedicated Network Gateway server (refer to page 26). Refer to <i>Installing hardware and software on an AS300 server</i> (refer to page 26).
	If required, install the IMPAX Network Gateway packages (refer to page 62). Refer to <i>Installing IMPAX on the Network Gateway</i> (refer to page 62).

Installing hardware and software on an AS300 server

3

Before installing IMPAX on a server, you must install and configure the required hardware and software components.

If you are using an Oracle Database Server on a Solaris host (in a mixed-host configuration), refer to the *Getting started* and *Setting up a Solaris server* sections of the *IMPAX 6.3 AS3000 Installation and Configuration Guide*. (If you are upgrading from an AS3000 to a mixed-host configuration, you do not have to set up the Solaris server.)

1. Installing Windows Server 2003 R2

To install IMPAX 6.3, Windows must first be installed on your machine. Before you begin, ensure that the proper CD drivers are installed.



Note:


If you are installing RAID, install Windows Server 2003 R2 after the RAID is installed and configured.

Windows Server 2003 R2 is the operating system for IMPAX 6.3.

To install Windows Server 2003 R2

1. To boot the system, insert the Windows 2003 Server R2 disk 1 install CD into the server's CD drive.
2. On the Welcome screen, press **Enter**.
3. To accept the license agreement, press **F8**.
4. To create a partition, press **C**.

5. Set the partition size to 20 GB and press **Enter**.
6. To set up Windows on the partition, press **Enter**.
7. Select **Format the Partition using NTFS File System** and press **Enter**
The partition is formatted and files are copied. Depending on how big the partition is, this may take several minutes.
8. Follow the setup wizard using the following selections:

Window	Response
Name	Agfa
Organization	Agfa
Product Key	Windows ID number
License Mode	Per Server licensing, 5 licenses
Computer Name	As specified on order The maximum length for the hostname is 16 characters  CAUTION! To communicate properly with the Database Server software, you must enter the Computer Name in all uppercase letters.
Network Setting	Typical or as per your network administration policy
Workgroup/Domain	Select the Workgroup option, unless the computer will be connecting to the hospital domain for authentication. In this case, select Domain. Workgroup name is IMPAX.

9. When disk 1 installation is complete, restart the server.
10. When prompted, insert Windows Server 2003 R2 disk 2 into the server's CD drive.
11. When disk 2 installation is complete, restart the server.
12. Install the latest Windows Update patches.



CAUTION!

When installing Windows Update patches, do not install the Malicious Software Removal Tool. This tool may try to remove IMPAX software.

2. Upgrading Windows 2003 SP1 to Windows 2003 R2

If upgrading an existing IMPAX server running on Windows 2003 SP1, you can optionally upgrade the operating system to Microsoft Windows 2003 R2.

To upgrade from Windows 2003 SP1 to Windows 2003 R2

1. Insert the Windows 2003 Server R2 disk 2 into the station's CD drive.
2. When prompted, enter the **product key**.
3. When prompted, accept the terms of the End User License Agreement.
4. When disk 2 installation is complete, restart the server.
5. Install the latest Windows Update patches.
6. Restart the system.

3. Configuring the Windows Control Panel

To follow the procedures in this guide, ensure that the Windows Control Panel displays the classic Windows categories.

To switch to Control Panel classic view

1. Open Control Panel.
2. In the left pane, under Control Panel, select **Classic View**.

The Control Panel window refreshes to display the same categories as in older releases of Windows. In the left pane, **Icon View** is displayed under the Control Panel heading.

4. Configuring Windows 2003 Server

To configure Windows 2003 Server, several steps are involved:

- Activate Windows
- Configure the system settings
- Configure Windows Explorer
- Create a temp drive
- Enable security certificate validation

To activate Windows

1. If you are not prompted to do so, select **Start > All Programs > Activate Windows**.

2. Follow the prompts to activate Windows.

To configure Windows Event Viewer to overwrite events as necessary

1. Select **Start > Administrative Tools > Event Viewer**.
2. In the Event Viewer, for each log:
 - a. Right-click the log.
 - b. Select **Properties**.
 - c. Under Log Size, select **Overwrite events as needed**.
 - d. To save the changes, click **OK**.

To configure Windows Explorer to show all files

1. Select **Start > Windows Explorer**.
2. In Windows Explorer, select **Tools > Folder Options**.
3. Switch to the **View** tab.
4. Under Files and Folders, select **Show hidden files and folders**.
5. Clear the **Hide extensions for known file types** checkbox.
6. To save the changes, click **OK**.

To create a temp directory

1. In Windows Explorer, select the **C:** drive.
2. Select **File > New > Folder**.
3. Rename the new folder as **temp**.

To support security certificate validation

1. In Internet Explorer, select **Tools > Internet Options**.
2. Switch to the **Advanced** tab.
3. Under Security, clear the **Check for server certification revocation (requires restart)** checkbox.
4. Click **OK**.
5. Restart the computer.
6. Log in as a Windows administrator.

5. Partitioning disks

To store the files and programs required by IMPAX, create logical volumes as shown in the table in *Information to consider when partitioning disks* (refer to page 30). This procedure assumes that the server has multiple disks. If it has only one disk, create all the logical volumes on the same disk.



CAUTION!

Use the logical volumes only for their prescribed functions. Do not store unnecessary files in the logical volumes or you may negatively affect system performance.

Information to consider when partitioning disks

- If you have a large disk array (RAID), create more than one CACHE logical volume. Do not allocate more than 500 GB for each logical volume.
- For Autopilot to correctly monitor cache space, each cache created in the Administration Tools must be on its own logical volume.

In either of these cases, assign drive letters to each logical volume sequentially, starting at H, and name them CACHE1, CACHE2, and so forth.

You must create subdirectories in the CACHE or WEBCACHE partitions to store the imaging data. The existing SYSTEM volume on C should be used for Windows and all program files.

Letter	Volume label	Size	Server	Used for
E	DATABASE	36 GB	single-host Database Server	SQL Server files and database
F	VOLUMES	10 GB	single-host Archive Server	CD-R and DVD-R images
G	LOGS	1 GB	single-host Archive Server Network Gateway	Log files
H	CACHE	Remaining space	single-host Archive Server Network Gateway	IMPAX image files
I *	GHOST	20 GB	single-host Database Server Archive Server Network Gateway	Software repository and Symantec Ghost backup images

* If you have more than one CACHE volume, assign drive letters to the CACHE volumes first, then create the GHOST volume. In this case, your GHOST volume will not use the letter I.

**Note:**

Throughout this document it is assumed that a CD device is assigned to drive D, and that the drive letters and names shown here are used. The volume letters and labels on your system may differ from those used here.

Configuring labels for jukebox CD-R and DVD-R archives

Configure the labels for the jukebox CD-R and DVD-R archives on single-host or Archive Servers.

To configure labels for jukebox CD-R and DVD-R archives

1. Select **Start > Administrative Tools > Computer Management**.
2. Under Storage, select **Disk Management**.
3. For each reader and writer:
Right-click the device and select **Change Drive Letter and Paths**.
Click **Change**.
Assign letters as shown in the table that follows and click **OK**.
4. To confirm that the drive letter should be changed, click **Yes**.

Letter	Used for
X	Reader 1
Y	Reader 2
Z	Writer

Creating the logical volumes

Before proceeding, ensure that you have determined how to partition the disks. Refer to *Information to consider when partitioning disks* (refer to page 30).

Use the Windows Administrative Tools to create new disk partitions.

To create the logical volumes

1. Select **Start > Administrative Tools > Disk Management**.
2. In Windows Disk Management, right-click the unallocated portion of Disk 0 and select **New Partition**.
3. Follow the New Partition Wizard to create an extended partition using the remaining space on the disk.
4. If you have more than one disk, for each additional disk, follow steps 3 and 4 to create the extended partition on the disk.

- For each logical volume that is required, right-click the remaining free space in the extended partition and select **New Logical Drive**. Follow the New Partition Wizard, using the following settings:

Dialog	Select
Specify Partition Size	As specified in the table in <i>Information to consider when partitioning disks</i> (refer to page 30)
Assign Drive Letter or Path	<ul style="list-style-type: none"> Select Assign the following drive letter Assign the letter as specified in the table in <i>Information to consider when partitioning disks</i> (refer to page 30)
Format Partition	<ul style="list-style-type: none"> File System: NTFS Allocation Unit Size: Default Volume label: As specified in the table in <i>Information to consider when partitioning disks</i> (refer to page 30)

- Exit Disk Management.

6. Installing video drivers

Install the video drivers using the Express Setup utility and configure the display settings.

To configure the video drivers

- Open Control Panel.
- Select **Display**.
- Switch to the **Background** tab.
- Configure the following settings:

Setting	Variable
Pattern	None
Picture Display	Tile

- Switch to the **Settings** tab.
- Configure the following variables:

Setting	Variable
Colors	65536 Colors
Screen Area	1024 x 768
Advanced: Refresh Frequency	85

- Click **Apply**.

**Note:**

To prevent problems in displaying all of the colors in the Administration Tools, set the color palette to use 65536 colors (minimum setting). As well, depending on the monitor type and video card, the Refresh Frequency may need to be lower or higher than 85. Use a setting that works well for your display.

7. Installing SQL Server 2000

This topic applies only to a single-host server (including standalone and single-server configurations) and to the Database Server in a multi-host configuration.

SQL Server 2000 SP4 is the AS300 database application for IMPAX 6.3. Install SQL Server, then install the service pack to keep the system up-to-date.

**Tip:**

While installing SQL Server 2000, if you receive an error message that SQL Server 2000 SP2 and below are not supported, you can safely ignore the error message. Follow the instructions in this guide to install the correct service pack.

To install SQL Server 2000

1. Follow the instructions supplied with the SQL Server 2000 software.

Important installation notes for SQL Server 2000

- Ensure that you are logged in as a Windows administrator.
- Select **SQL Server 2000 components**.
- Select **Install Database server**.
- Follow the installation wizard. Key selections are listed in the table that follows. Accept all other defaults.

**Tip:**

To advance through the screens, click **Next**

Window	Response
Computer Name	Select Local Computer .
Installation Selection	Select Create a new instance of SQL Server, or install Client Tools .
User Information	Type the appropriate name and company.
CD-Key	Type the CD key as indicated on the SQL Server CD.

Window	Response
Install Definition	Select Server and Client Tools .
Setup Type	Select Typical and change the destination of the Program Files and Data Files to the recommended drive (often E:\). An MSSQL directory is created during the installation.
Services Accounts	Under Service Settings, select Use the Local System account .
Authentication Mode	Select Mixed Mode . Type the password for the system administrator (sa) user.
Choose Licensing Mode	Select Per seat and ensure that the number is set to 10.

- After SQL Server is installed, restart your computer.

8. Installing SQL Server 2000 SP4

This topic applies only to a single-host server (including standalone and single-server configurations) and to the Database Server in a multi-host configuration.

The IMPAX 6.3 AS300 database requires SQL Server 2000 SP4. SQL Server 2000 SP4 is provided with IMPAX 6.3.

To install SQL Server 2000 SP4

1. Log into Windows as an administrator.
2. Insert the SQL Server CD included with IMPAX 6.3 into the CD-ROM drive.
3. Navigate to sqlsp4 and double-click **sql2000-kb884525-sp4-x86-enu.exe**.
4. To extract the files to the default folder, click **Next**.
5. To close the InstallShield wizard, click **Finish**.
6. Navigate to the location of the extracted files.
7. Double-click **setup.bat**.
8. Follow the Installation wizard instructions and accept all defaults, except for the following:
 - In the Connect to Server dialog, select **The SQL Server system administrator login information (SQL Server authentication)**, and type the password for the system administrator(sa) user.
 - If running Windows 2003 R2, in the SQL Server 2000 Service Pack 4 Setup dialog, select **Upgrade Microsoft Search and apply SQLServer 2004 SP4 (required)**.
 - Optionally, in the Error reporting dialog, select **Automatically send fatal error reports to Microsoft**.

This enables error reporting for the SQL Server database engine and SQL Server Agent. If a fatal error occurs in the SQL Server database engine or SQL Server Agent, SQL Server automatically sends a report to Microsoft, which uses error reports to improve SQL Server functionality.

9. When prompted, restart the system.
If you are not prompted to automatically restart, manually restart the computer.
10. After the computer restarts, log into Windows as an administrator.
11. Verify that the SQL Server icon in the system tray indicates that SQL Server is running.
12. To verify that SP4 has been installed correctly, select **Start > All Programs > Microsoft SQL Server > Server Network Utility**.
13. Switch to the **Network Libraries** tab.
14. Ensure that the TCP/IP version is 8.0.2039.

9. Installing Symantec Ghost 8, Enterprise Edition

Symantec Ghost is used to back up the system at defined intervals in case the system must be restored. Configure Ghost to store ghost images to the GHOST partition. We recommend that you create a backup of the Windows installation now.

To install Symantec Ghost

1. Follow the manufacturer's installation instructions.

To back up an image of the Windows installation

1. Follow the manufacturer's instructions for creating a ghost backup.

10. Configuring the archive

This topic applies only to an Archive Server, or to the Archive component of a single-host server (including standalone with archive and single-server configurations).

IMPAX supports the following archive configurations:

- CD-R in non-jukebox and jukebox configurations
- DVD-R in non-jukebox and jukebox configurations
- HSM
- PACS Store and Remember



Tip:

For further details on archive functionality, refer to the Archive Server component of the *IMPAX 6.3 Server Knowledge Base*.

Enabling and configuring CD-R or DVD-R archives

- Install the archive according to the manufacturer's instructions. Enable and configure it to make a connection with IMPAX.
- After following the manufacturer's instructions for setup, ensure that the archive is left powered on. During the next system restart, the IMPAX computer automatically detects the archive and establishes a connection.
- If you manually stop the archive services, you must restart the server so the services start cleanly.
- If you are using a jukebox archive, all drives must be enabled. Fill all of the jukebox magazines with blank media. On startup, the archive initializes itself and examines all the media in the magazines. This initialization may take several hours, depending on the amount of media; however, if you wait until after IMPAX is started, you can only fill the jukebox one disk at a time through the mailslot. Therefore, we recommend that all magazines be filled before the archive is started.




CAUTION!

After you have filled the jukebox with media, keep the jukebox key switch in the locked position. If the key switch is in the unlocked position while the archive is being controlled by the IMPAX software, some archive operations may fail. Unlock the archive only for specifically required access; for example, to add or remove disk magazines or to change the operational functions.

- If you are using a DRM-3000 or DRM-7000 jukebox, some of the jukebox's optional functions must be configured using the operation keys on the front of the jukebox. For additional details on each of the settings under Option submode, refer to the DRM-3000 or DRM-7000 Operating Instructions.

To configure the operational functions

1. Unlock the archive.
2. Press **FUNCTION**.
3. Press  until you see Option submode.
4. Press **ENT**.
5. Configure the settings as specified in the table that follows:

Settings		
	DRM-3000	DRM-7000
Auto probing	ON	ON
Hot start	OFF	OFF
Auto eject	ON	ON
Hyper I/E	OFF	OFF

Settings		
Alert buzzer	ON	ON
Free message	OFF	OFF
Inquiry change	DRM-3000*	DRM-7000*
FAN NG message	ON*	

*Do not change this setting.

Enabling and configuring HSM and PACS Store and Remember archives

HSM and PACS Store and Remember archives are configured after IMPAX is installed. Continue with the installations in this guide. Instructions for configuring HSM and PACS Store and Remember archives are contained in the *IMPAX 6.3 AS300 Configuration Guide*.

11. Synchronizing clocks on IMPAX systems

If the system time on the Application Server and the image server (ASPFTP server) differs, the authentication tickets provided by the IMPAX Client are rejected by the ASPFTP server and image retrieval fails. To ensure that this does not happen, configure the IMPAX systems to automatically synchronize their system time with a common server.



Note:

Also ensure that the time zone for the computer is set correctly.

The instructions that follow use the synchronization feature built into the operating system. When configured, Windows Time Service sets and synchronizes the system time with a standard time server.

To synchronize IMPAX with the time server if the IMPAX computer is not a member of a domain

1. Open Control Panel.
2. Select **Date and Time**.
3. Switch to the **Internet Time** tab.
4. In the **Server** list, type or select the time server to synchronize with.

To synchronize IMPAX with the time server if the IMPAX computer is a member of a domain

1. At a command prompt, type:
`w32tm /config /syncfromflags:manual /manualpeerlist:<time server>`
 where <time server> is the DSN name or IP address of the time server. The <time server> can be any Windows- or Solaris-based server.
2. To update Windows Time Service to use the new configuration, type:
`w32tm /config /update`

3. To synchronize the clock, type:
w32tm /resync

12. Installing IIS 6.0

The Application Server requires IIS, as do the Administration Tools and the Knowledge Base.



Note:

When installing IIS, ensure that you do not install the remote administration options, as these pose a security risk.

To install IIS 6.0

1. Open Control Panel.
2. Select **Add or Remove Programs**.
3. Click **Add/Remove Windows Components**.
4. In the Windows Components Wizard dialog, select the **Application Server** checkbox.
5. Click **Details**.
6. Select **Internet Information Services** and click **Details**.
7. In the Internet Information Services (IIS) dialog, select **World Wide Web Service**.
The **Internet Information Services Manager** and **Common Files** checkboxes are automatically selected.
8. To save the change, click **OK**.
9. To install IIS, click **Next**.
10. To close the installation dialog, click **Finish**.

13. Configuring the connection to the SQL Database Server

This topic applies only to an AS300 multi-host configuration. For an AS3000 mixed-host configuration, refer to *Installing and configuring the Oracle 10g Client* (refer to page 39).

Configure the ODBC connection to the SQL Database Server. This connection is required for the Archive Server or Network Gateway to communicate with the Database Server.

To configure the ODBC connection

1. Select **Start > Administrative Tools > Data Sources (ODBC)**.
2. Switch to the **System DSN** tab.
3. Click **Add**.
4. In the Create New Data Source dialog, select **SQL Server**.
5. Click **Finish**.

6. In the **Name** field, type **mvf**.
7. In the **Description** field, type **mvf**.
8. From the **Server** list, select the Database Server name.
If the Database Server name is not in the list, manually type it in.
9. Click **Next**.
10. Select the **SQL Server Authentication** option.
11. In the **Login ID** and **Password** fields, type the username and password for the mvf user.
Ensure that all systems have the same username and password for the Database Server.
12. Click **Client Configuration**.
13. In the Add Network Library Configuration dialog, select **TCP/IP**.
14. Click **OK**.
15. Click **Next**.
16. Select the **Change the default database to** checkbox.
17. From the list, select **mvf**.
18. Click **Next**.
19. Clear the **Perform translation for character data** checkbox.
20. Click **Finish**.
21. To test the connection, click **Test Connection**.
22. In the Oracle ODBC Driver Connect dialog, type the password for the mvf user and click **OK**.
23. When prompted that the connection was successful, click **OK**.
24. To close the Oracle ODBC Driver Configuration dialog, click **OK**.
25. To close the ODBC Data Source Administrator window, click **OK**.

14. Installing and configuring the Oracle 10g Client

This topic applies only to IMPAX AS3000 (Oracle database) sites.

The Oracle 10g Client (version 10.2) software installs the drivers and programs required to communicate with the Oracle Server. Before installing the Oracle 10g Client, ensure that the network and TCP/IP are properly installed and configured.

The default location of the hosts file is C:\windows\system32\drivers\etc. You can safely ignore the following warning messages during the installation: *WARNING: can't access /usr/oracle/current/lib/libagtsh.so* or *WARNING: can't access /usr/oracle/current/lib32/libagtsh.so*.



Note:

If you encounter an error during the installation similar to *Error: "Thrown when IP address of a host cannot be determined"*, check your hosts file and ensure that it contains a valid IP address other than 127.0.0.1. If the IP address is valid, you can safely ignore this error message and continue with the installation.

To uninstall any previous versions of Oracle Client

1. If an earlier version of Oracle Client is installed on the system, uninstall that version before installing Oracle 10g Client.

To install Oracle 10g Client

1. Insert the IMPAX AS3000 DVD-ROM into the DVD drive.
2. In Windows Explorer, navigate to **D:\Programs\Oracle10_2_0_1**.
3. Unzip the **10201_client_win32.zip** file.
4. Run the unzipped Oracle 10g Client installer.
5. To open the Universal Installer, click **Install**.
6. In the Welcome dialog, click **Next**.
7. In the Installation type dialog, select **Administrator** and click **Next**.
8. Under Destination, in the **Name** field, accept the default or type a new name.
9. Under Destination, in the **Path** field, select or type a path identifying where to install the client, and click **Next**.

We recommend installing the Oracle 10g Client to E:\.

10. In the Product Specific Pre-requisite Checks dialog, click **Next**.
11. In the Summary dialog, click **Install**.

The Oracle Net Configuration Assistant may be hidden behind the Oracle Universal Installer window. Minimize the Oracle Universal Installer window to see the Oracle Net Configuration Assistant.

After the installation process finishes, the Oracle Net Configuration Assistant should open automatically.

12. If not continuing with configuration immediately, to close the Configuration Assistant, click **Stop**.
If you receive any warning messages or prompts about closing the Configuration Assistant, confirm that you want to close and exit out of the Configuration Assistant. Although it says that you may lose changes, you have not made changes to the configuration yet and no changes will be lost.

To set up a connection to the database

1. If the Net Configuration Assistant is not open, select **Start > All Programs > Oracle - <Oracle instance name> > Configuration and Migration Tools > Net Configuration Assistant**.
Where *<Oracle instance name>* is the name typed in step 8 of the *To install Oracle 10g Client* procedure.
2. In the Oracle Net Configuration Assistant Welcome dialog, select **Local Net Service Name configuration** and click **Next**.
3. If the Naming Methods Configuration dialog appears, select **Local Naming**. Click **Next**.
4. In the Net Service Name Configuration dialog, select **Add**. Click **Next**.
5. In the **Service Name** field, type **MVF**. Click **Next**.
6. From the list of protocols, select **TCP**. Click **Next**.
7. In the TCP/IP dialog, type the hostname of the Oracle server.

8. Accept the default port number (1521). Click **Next**.
9. Select **Yes, perform a test**. Click **Next**.
The first time the test runs, you see an error message. Ignore the error.
10. Click **Change Login**.
11. In the **Username** field, type **mvf**, and type the password for the mvf user.
12. Click **OK**.
The test is performed again. The connection should be successful.
13. Click **Next**.
14. In the **Net Service Name** field, ensure that **MVF.world** appears. Click **Next**.
15. At the prompt to configure another net service name, select **No**. Click **Next**.
16. In the Net Service Name Configuration Complete dialog, click **Next**.
17. In the Naming Methods Configuration Complete dialog, click **Next**.
18. To close the Net Configuration Assistant dialog, click **Finish**.

To configure the ODBC data source name

1. Open Control Panel.
2. Select **Administrative Tools**.
3. Select **Data Sources (ODBC)**.
4. Switch to the **System DSN** tab.
5. Click **Add**.
6. In the Create New Data Source dialog, select **Oracle in <Oracle instance name>**.
Where *<Oracle instance name>* is the name typed in step 8 of the *To install Oracle 10g Client* procedure.
7. Click **Finish**.
8. In the **Data Source Name** field, type **MVF**.
9. Type a description, if needed.
10. In the **TNS Service Name** field, type **MVF.world**.
11. In the **User Name** field, type **mvf**.
The user ID must be lowercase.
12. To save the changes and close the dialog, click **OK**.
13. To save the new source and exit the ODBC Data Source Administrator dialog, click **OK**.
14. Close the Control Panel window.

To configure the character set

1. Select **Start > Run**.
2. In the **Open** field, type **regedit**.
3. In the Registry Editor window, navigate to
HKEY_LOCAL_MACHINE\SOFTWARE\ORACLE\KEY_*<Oracle instance name>*.

- where *<Oracle instance name>* is the name typed in the *To install Oracle 10g Client* procedure.
4. Update the NLS_LANG value to AMERICAN_AMERICA.WE8ISO8859P1.
 5. Exit from the Registry Editor.

15. Enabling Automatic Updates for critical Windows updates

Automatic Updates allow Microsoft to automatically determine what critical system updates are needed for a system and to automatically download those updates. Only patches that Microsoft deems as critical system updates are downloaded. Critical updates are downloaded to C:\Program Files\WindowsUpdate\V4. When updates are downloaded, the Automatic Updates icon appears in the Windows taskbar.

If a critical update has a negative effect on the IMPAX system, the critical update can be uninstalled using the Windows Add/Remove Programs dialog. Overall, Agfa believes that the risk to patient information is far greater if the system is not patched and does not have the prescribed critical system updates.



Note:

To provide a baseline to which the system can be restored in the event of a failure, before enabling Automatic Updates, we recommend that the system be “Ghosted” using Symantec Ghost and that the database be backed up.

To enable Automatic Updates

1. Open Control Panel.
2. Select **System**.
3. Switch to the **Automatic Updates** tab.
4. Select **Download updates for me, but let me choose when to install them**.
5. To apply the changes, click **OK**.
6. To verify that the Automatic Updates service is started, at a command prompt, type **net start**.
7. Verify that Automatic Updates is included in the list of services.



Tip:

Automatic Updates requires a direct Internet connection. If the system does not have a direct Internet connection, a local Software Update Server can be used instead. To set up a Software Update Server, contact your IT department.

16. Enabling active content for the Knowledge Base

In Internet Explorer 6.0 SP2 and later, all scripts on web pages are blocked by default. The IMPAX Knowledge Bases use JavaScript for their Search functionality and to render glossary definition popups.

If JavaScript is blocked by the browser, when you view a Knowledge Base page, the definitions of the glossary terms rendered with JavaScript cannot be viewed, and searching is impossible.

Enabling local access to Knowledge Bases

If you are accessing the Knowledge Base from the IMPAX Documentation CD or from a local drive, you must allow active content (including JavaScript) to run locally.

To enable local access to Knowledge Bases

1. Launch Internet Explorer.
2. In Internet Explorer, select **Tools > Internet Options**.
3. In the Internet Options dialog, switch to the **Advanced** tab.
4. Select the **Allow active content to run in files on My Computer** checkbox.
5. Select the **Allow active content from CD to run on My Computer** checkbox.
6. For the changes to take effect, close and restart Internet Explorer.

You can now run the Knowledge Bases from the CD or from a local drive.

Enabling remote access to Knowledge Bases

Perform this task to access Knowledge Bases installed on a different server (such as the Application Server).

To enable remote access to Knowledge Bases

1. Launch Internet Explorer.
2. In Internet Explorer, select **Tools > Internet Options**.
3. In the Internet Options dialog, switch to the **Security** tab.
4. Select **Trusted sites**.
5. Click **Sites**.
6. In the Trusted sites dialog, if you are connecting to the Knowledge Base using http:// rather than https://, clear the **Require server verification (https:) for all sites in this zone** checkbox.

We recommend that https:// be used.

7. In the **Add this Web site to the zone** field, type or paste the name of the Application Server that the Knowledge Bases are installed on (https://<server_name>).
8. Click **Add**.
9. Click **Close**.
10. Under Security level for this zone, ensure that the level is set to **Low** (the default).

or

If you are using a custom security level in this zone, click **Custom Level**. In the Security Settings dialog, under Scripting, ensure that **Active scripting** is enabled and click **OK**.

11. Click **Apply**.
12. Click **OK**.

17. Installing a modem

If an external modem is supplied with the order, install it using the manufacturer's instructions.

18. Installing and configuring antivirus software

Install and configure the antivirus software according to the manufacturer's instructions.

19. Installing pcAnywhere 11.0

To allow remote service of IMPAX, install Symantec pcAnywhere software.

To install pcAnywhere 11.0

1. Insert the pcAnywhere CD into the CD drive.
2. If the installation screen does not appear automatically, use Windows Explorer to run **D:\setup.exe**.
3. Click **Symantec pcAnywhere Custom Installs**.
4. Click **Install pcAnywhere for the individual**.
5. In the Welcome dialog, click **Next**.
6. Accept the license agreement. Click **Next**.
7. In the username and organization name fields, type your organization. Click **Next**.
8. At the destination folder prompt, click **Next**.
9. In the Ready to Install the Program dialog, click **Install**.
10. To cancel the live update, in the Live Update window, click **Cancel**.
11. To skip the registration, click **Skip**.
12. To confirm that you want to skip the registration, click **Yes**.
13. To close the dialog, click **Finish**.
14. Restart the computer.

To configure pcAnywhere 11.0

1. Start pcAnywhere.
2. To skip the registration, click **Skip**.
3. To confirm that you want to skip the registration, click **Yes**.
4. From the left side of the screen, select **Hosts**.

5. On the right side of the screen, right-click **Network Cable DSL Modem** and select **Properties**.
6. In the Properties dialog, configure pcAnywhere with the following values:

Tab	Response
Connection	<ul style="list-style-type: none"> • Select the modem and TCP/IP. • Click Apply.
Settings	<ul style="list-style-type: none"> • Select Launch with windows. • Click Apply.
Callers	<ul style="list-style-type: none"> • From the Authentication type list, select pcAnywhere. • Click New Item.
Identification	<ul style="list-style-type: none"> • In the Login name field, type service. • In the Password field, type the service password.
Privileges	<ul style="list-style-type: none"> • Select Superuser. • To close the dialog, click OK.

7. Click **OK**.
8. In the Hosts window, right-click **Network, Cable, DSL** and select **Start Host**.
9. Ensure that the Symantec pcAnywhere waiting icon is in the system tray.

To run LiveUpdate and install the pcAnywhere 11.0.1 update



Note:

LiveUpdate requires a direct Internet connection. If the system does not have a direct Internet connection, a local Software Update Server can be used instead. To set up a Software Update Server, contact your IT department.

1. In pcAnywhere, select **Help > LiveUpdate**.
2. To have LiveUpdate look for available updates, click **Next**.
3. After LiveUpdate has determined which updates are available, to proceed with the update, click **Finish**.
4. When prompted, restart the computer.

20. Installing Adobe Reader

The IMPAX 6.3 Installation and Configuration guides ship with the product in PDF format. To view and print the files, install the Adobe Reader.



Note:

This installation procedure requires a direct Internet connection. If the system does not have a direct Internet connection, contact your IT department.

To install Adobe Reader

1. Download the software from Adobe's website at <http://www.adobe.com/products/acrobat/readstep2.html>.
2. Run the install executable.
3. In the Acrobat Reader Installation Wizard, select the appropriate options on each screen. After each selection, click **Next**.

21. Obtaining Server license keys

IMPAX uses software license keys that are unique to the station on which the software is installed. One license key is required for the Network Gateway and a separate license key must be obtained for the Archive Server (even if using PACS Store and Remember archiving). The Pegasus JPEG license is no longer required for running Compressor, and so no longer has to be obtained.

Obtaining the MAC address on a Windows station

To obtain new license keys, if this is required, email licensekey@agfa.com. To generate the license keys, Agfa must know the Ethernet MAC (Media Access Control) address of the server.

To obtain the MAC address on a Windows station

1. For each server, open a command prompt and type **ipconfig /all**.
The MAC address of the Ethernet card installed on the station is listed as the physical address.
2. Copy this address to a secure place.
Ensure that you copy down the address exactly as it appears, including leading zeroes.
3. To obtain a license key for the server, send the MAC address information to licensekey@agfa.com, along with the type of component being installed on that server.

Installing IMPAX on an AS300 single-host server

Before proceeding with the AS300 single-host server installation, ensure that the system has been readied as outlined in *Installing hardware and software on an AS300 server* (refer to page 26). If installing IMPAX in a multi-host or mixed-host configuration, skip this chapter.

1. Prerequisites to IMPAX Server installation

Before installing IMPAX Server:

- Install all external software listed in *Installing hardware and software on an AS300 server* (refer to page 26). If MVFSqlServer is selected in the Default Packages group and SQLServer is not on the workstation, the installation exits and does not complete.
- Ensure that the server name registered in SQL Server is the same as the server name registered in Windows. If the names do not match, you must update the server name in SQL Server. Refer to *Server name registered in SQL Server is incorrect* (refer to page 78).
- Ensure that you have properly renamed the mvf and mvf archive license files. The license keys initial name is the machine's MAC address with a .lic. extension. Rename the mvf licence file to **mvf.lic**, and the mvf archive licence key to **mvfarch.lic**. The installation script copies them under C:\mvf.



CAUTION!

Keep a backup copy of the license key files in a directory other than C:\mvf. If the IMPAX software is uninstalled, all files are deleted from the C:\mvf directory.

2. Installing IMPAX 6.3 single-host server packages

Use the IMPAX installer to install the necessary AS300 packages on the system. These packages are described in *AS300 installer packages reference* (refer to page 17).

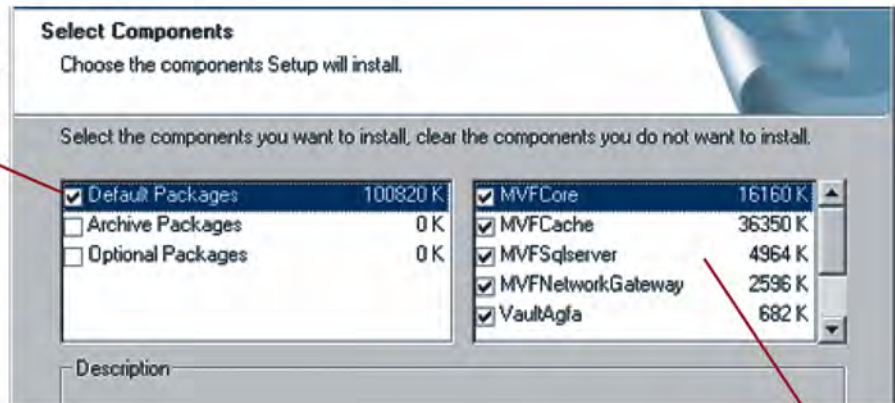
To install the IMPAX 6.3 packages

1. Log in as a Windows administrator.
2. Insert the IMPAX AS300 CD into the CD-ROM drive.
3. Navigate to D:\programs\mvf and double-click **as300-installer.exe**.
4. Type your name (minimum three characters).

This information is recorded in the installer log file.

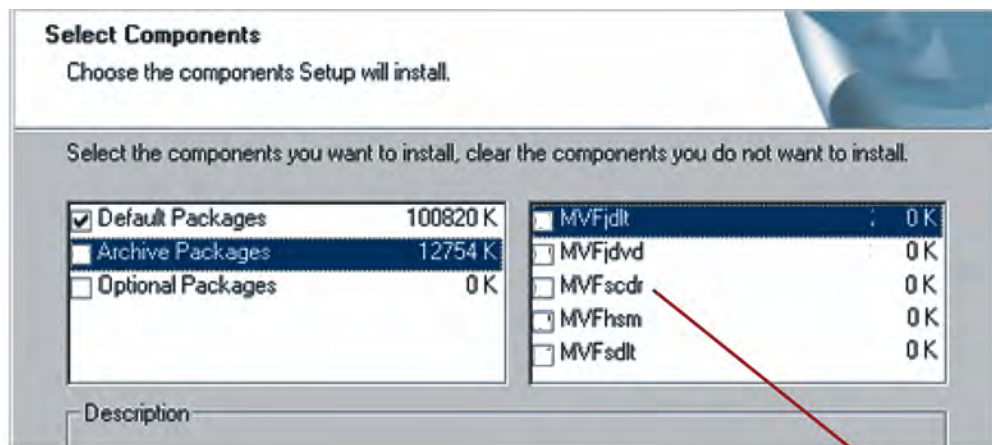
5. In the Welcome dialog, click **Next**.
6. In the Select Components dialog, all default packages are selected (as shown in the figure that follows). Clear the checkboxes of any packages that should not be installed.

Default
Packages
are already
selected



Clear the checkboxes of
any default packages that
are not required.

7. Unless using PACS Store and Remember archiving (or not using the station for archiving at all), select the **Archive Packages** label (*not* the Archive Packages checkbox), then select the checkbox of archive package the server is using.



Only one archive package can be selected.

8. Select the **Optional Packages** label, then selected the checkboxes of any optional packages that should be installed.
9. Click **Next**.
10. In the MVF License Location dialog, browse to the location of the MVF licence file and click **OK**.
If the mvf.lic file is not located in C:\mvf, the file is copied to that location. A dialog informs you of the success of the copy task.
11. Browse to the location of the MVF archive licence file and click **OK**.
If the mvfarch.lic file is not located in C:\mvf, the file is copied to that location. A dialog informs you of the success of the copy task.
12. When prompted, type the password for the AgfaService user.
The password must follow the password requirements as outlined in *Determining a password for the AgfaService account* (refer to page 16).
13. In the Type of Install dialog, select **Create a New Database** and click **Next**.
14. To confirm the creation of the database, click **Yes**.
15. Type the name of the Application Server and click **Next**.
16. In the Summary dialog, to continue the installation, click **Next**.
17. If you are using a jukebox CD-R or DVD-R archive, the Veritas Px Engine is installed. This engine must be installed to burn to DVD. Follow the prompts in the Veritas Px Engine Setup. When prompted to restart the computer after the engine is installed, click **No**.



CAUTION!

The IMPAX installation will not complete successfully if you restart the system at this time. The system must only be restarted after all packages are installed and the database scripts have been run.

18. To display the log file for the database scripts, when prompted, click **Yes**.
19. Check the log files for errors and then close the log files.

The dialogs must be closed for the installation script to continue.

20. After all the packages have been installed, to close the installation dialog and restart the system, click **Yes, I want to restart my computer now**.

If you are not prompted to restart your computer, manually restart the computer by selecting **Start > Shut Down**. In the Shut Down Windows dialog, from the list, select **Restart** and click **OK**.

3. Checking subpackage installations

The packages installed by the IMPAX installer use response files and the mitra_install.log file to monitor the success of the installations. Refer to these files to determine if the installations were successful.

To check the response code of installed packages

1. Check the log files located in C:\mvf\data\install.

Each package has its own log file. For a clean installation of a sub-package, the ResultCode is zero. Any other number indicates a failure.



Note:

The packages installed using the installer are not visible in Add/Remove Programs.

To check the status of installed packages

1. Check the log file C:\mvf\data\logs\mitra_install.log.

The installation details for each installed package are listed.

4. Updating the SQL Server registration

To correctly register SQL Server with the Database Server software and set up permissions within SQL Server, update the SQL Server registration.

To configure SQL Server

1. Log in as a Windows administrator.
2. Select **Start > All Programs > Microsoft SQL Server**.
3. Right-click **Enterprise Manager** and select **Run as**.
4. In the Run as dialog, select **The following user**.
5. From the **User name** list, select **AgfaService**.
6. In the **Password** field, type the password for the AgfaService account and click **OK**.

The SQL Server Enterprise Manager is opened using the AgfaService account permissions.

7. In the Explorer window of the Enterprise Manager, expand **Console Root > Microsoft SQL Servers > SQL Server Group**.

8. Right-click **(local)(Windows NT)** and select **Delete SQL Server Registration**.
If the (local)(Windows NT) option is not available, skip this step.
9. To confirm that you want to remove the server, click **Yes**.
10. Right-click **SQL Server Group** and select **New SQL Server Registration**.
11. In the Register SQL Server Wizard, select **From now on, I want to perform this task without using a wizard**.
12. Click **Next**.
13. In the **Server** field, type the name of the single-host or Database Server and click **OK**.
14. Select **Use SQL Server authentication**. Use **sa** as the account, and the password returned typing **C:\mvf\bin\passkey -M QUERY -u sa** and pressing **Enter**.

5. Configuring the Audit Record Repository database connection

After installing or upgrading the database and adding an Audit Record Repository (an audit server such as Audit Manager), you must update certain entries in the database to ensure that auditing functions correctly. If not using an Audit Record Repository, this task is not required.

Perform this task on the Database Server.

To configure the Audit Record Repository database connection

1. In Windows, at a command prompt, type:
cd \mvf\bin
In Solaris, in a terminal window, type:
cd usr/mvf/bin
2. Type **clui**.
3. To check if the entry already exists in the database, type:
select * from map_ini where ini_key='ARR_INSTALLED' and ini_section='MAP_EVENT'
4. If the entry exists, update the entry it as by typing:
update map_ini set ini_value='T' where ini_key='ARR_INSTALLED' and ini_section='MAP_EVENT'
or
If the entry does not exist, insert it by typing:
insert into map_ini (ini_section,ini_key,ini_value) values ('MAP_EVENT','ARR_INSTALLED','T')

The Application Server must also be connected to the Audit Record Repository. Refer to *Connecting to an audit server* in the IMPAX 6.3 Application Server Configuration Guide.

Installing IMPAX on a dedicated AS300 Database Server

Before proceeding with the AS300 Database Server installation, ensure the system has been readied as outlined in *Installing hardware and software on an AS300 server* (refer to page 26). If using an AS3000 Database Server, refer to the *Getting started* and *Setting up a Solaris server* sections of the *IMPAX 6.3 AS3000 Installation and Configuration Guide*. If installing a single-host configuration, refer to *Installing IMPAX on an AS300 single-host server* (refer to page 47).

1. Prerequisites to IMPAX Server installation

Before installing IMPAX Server:

- Install all external software listed in *Installing hardware and software on an AS300 server* (refer to page 26). If MVFSqlserver is selected in the Default Packages group and SQLServer is not on the workstation, the installation exits and does not complete.
- Ensure that the server name registered in SQL Server is the same as the server name registered in Windows. If the names do not match, you must update the server name in SQL Server. Refer to *Server name registered in SQL Server is incorrect* (refer to page 78).

2. Installing a dedicated IMPAX AS300 Database Server

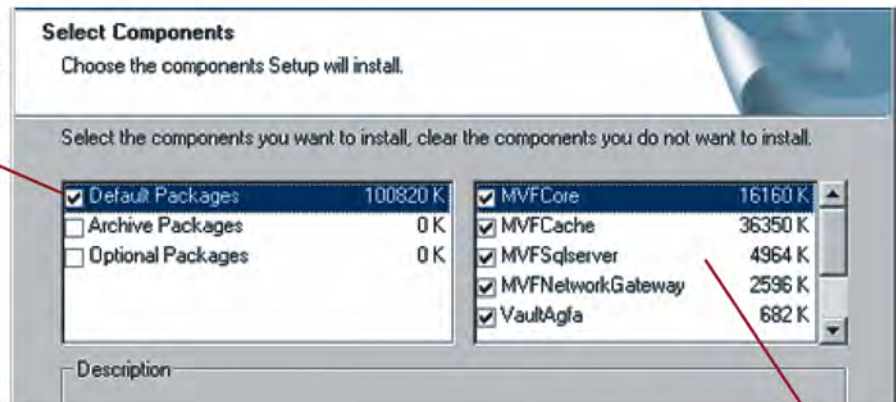
Use the IMPAX installer to install the necessary AS300 packages on the system. These packages are described in the *AS300 installer packages reference* (refer to page 17).

To install the IMPAX packages

1. Log in as a Windows administrator.
2. Insert the IMPAX AS300 CD into the CD-ROM drive.

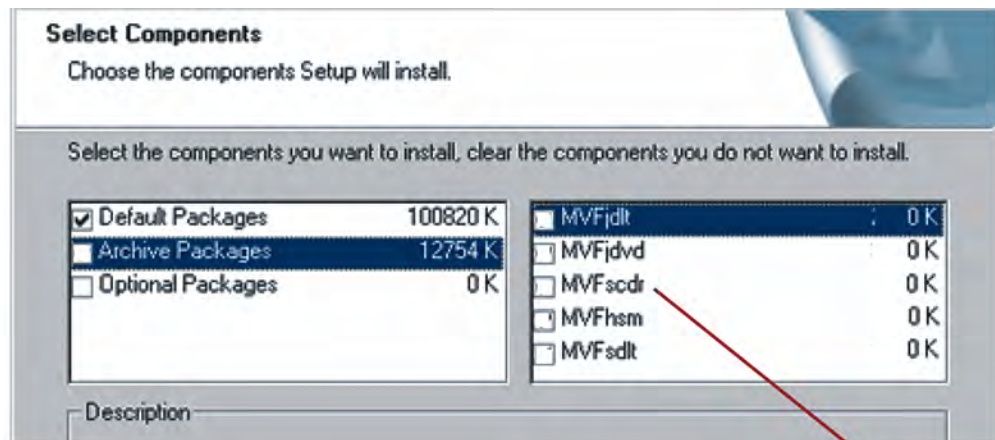
3. Navigate to D:\programs\mvf and double-click **as300-installer.exe**.
4. Type your name (minimum three characters).
This information is recorded in the installer log file.
5. In the Welcome dialog, click **Next**.
6. In the Select Components dialog, all default packages are selected (as shown in the figure that follows). Clear the checkboxes of any packages that should not be installed.

Default Packages are already selected



Clear the checkboxes of any default packages that are not required.

7. Clear the **Archive Packages** checkbox.



Only one archive package can be selected.

8. Select the **Optional Packages** label, then select the checkboxes of any optional packages that should be installed.
9. Click **Next**.
10. When prompted, type the password for the AgfaService user.

The password must follow the password requirements as outlined in *Determining a password for the AgfaService account* (refer to page 16).

11. In the Type of Install dialog, select **Create a New Database** and click **Next**.
12. To confirm the creation of the database, click **Yes**.
13. Type the name of the Application Server and click **Next**.
14. In the Summary dialog, to continue the installation, click **Next**.
15. To display the log file for the scripts, when prompted, click **Yes**.
16. Check the log files for errors and then close the log files.

The dialogs must be closed for the installation script to continue.

17. After all the packages have been installed, to close the installation dialog and restart the system, click **Yes, I want to restart my computer now**.

If you are not prompted to restart your computer, manually restart the computer by selecting **Start > Shut Down**. In the Shut Down Windows dialog, from the list, select **Restart** and click **OK**.

3. Checking subpackage installations

The packages installed by the IMPAX installer use response files and the mitra_install.log file to monitor the success of the installations. Refer to these files to determine if the installations were successful.

To check the response code of installed packages

1. Check the log files located in C:\mvf\data\install.

Each package has its own log file. For a clean installation of a sub-package, the ResultCode is zero. Any other number indicates a failure.



Note:

The packages installed using the installer are not visible in Add/Remove Programs.

To check the status of installed packages

1. Check the log file C:\mvf\data\logs\mitra_install.log.

The installation details for each installed package are listed.

4. Restoring the database and services



CAUTION!

This topic applies only if you are upgrading from a single-host configuration to a multi-host configuration. Do **not** perform this task when installing a new AS300 Database Server.

To restore the mvf database to the new Database Server

1. To stop and remove the services, browse to C:\mvf\bin\ and run **stopall.bat**, then **removeall.bat**.
2. From the Start menu, select **All Programs > Microsoft SQL Server > Enterprise Manager**.
3. If you are restoring from tape, insert the backup tape into the tape drive.
4. In the Explorer window of the Enterprise Manager, expand **Console Root > Microsoft SQL Servers > SQL Server Group > <server> > Databases**.
5. Right-click the database to restore and select **All Tasks > Restore Database**.
6. In the Restore database dialog, beside Restore, select **From device**.
7. Click **Select Devices**.
8. In the Choose Restore Devices dialog, select the appropriate device.
9. To specify the device that contains the backup from which you must restore, click **Add**.
10. In the Choose Restore Destination dialog, select **Backup device**.
11. Type the name of the backup device; for example, tape_backup1.
12. Click **OK**.
13. In the Choose Restore Devices dialog, click **OK**.
14. In the Restore database dialog, click **View Contents**.
15. In the View Contents dialog, select the backup to restore.
16. Click **OK**.
17. In the Restore database dialog, the Backup Number field indicates which backup is being restored.
18. Under Restore backup set, select **Database - complete**.
19. Switch to the **Options** tab.
20. Select **Force restore over existing database**.
21. Click **Read From Media**.
22. The names of the database files that you are restoring are displayed. If they are not correct, repeat steps 14 to 15.
23. Select **Leave database operational**.
No additional transaction logs can be restored.
24. Click **OK**.
The database is restored. After the restore is complete, a confirmation message appears stating whether the restore was successful.

After the database has been successfully restored, install and start the IMPAX services again.

To restore the MVF services

1. Browse to C:\mvf\bin and run **installall.bat**, then **startall.bat**.
2. Restart the server.

5. Generating the portable password file

To install the other components, you must generate a password file from the Database Server to synchronize passwords between the components. The file contains all of the user IDs and passwords for all default IMPAX users. The file must be copied to other components as requested during those installations.

To generate the portable password file

1. At a command prompt, type:

```
C:\mvf\bin\
```

```
passkey -M EXPORT -k <temporary password>
```

where *<temporary password>* is the password used to import the password file when installing or configuring the other components.

The password file is created in C:\mvf\mvf.portable.psd.



CAUTION!

The mvf.portable.psd file contains sensitive information. To ensure that the security of the system is maintained, delete the password file after all required components are installed.

6. Updating the SQL Server registration

To correctly register SQL Server with the Database Server software and set up permissions within SQL Server, update the SQL Server registration.

To configure SQL Server

1. Log in as a Windows administrator.
2. Select **Start > All Programs > Microsoft SQL Server**.
3. Right-click **Enterprise Manager** and select **Run as**.
4. In the Run as dialog, select **The following user**.
5. From the **User name** list, select **AgfaService**.
6. In the **Password** field, type the password for the AgfaService account and click **OK**.
The SQL Server Enterprise Manager is opened using the AgfaService account permissions.
7. In the Explorer window of the Enterprise Manager, expand **Console Root > Microsoft SQL Servers > SQL Server Group**.
8. Right-click **(local)(Windows NT)** and select **Delete SQL Server Registration**.
If the (local)(Windows NT) option is not available, skip this step.
9. To confirm that you want to remove the server, click **Yes**.

10. Right-click **SQL Server Group** and select **New SQL Server Registration**.
11. In the Register SQL Server Wizard, select **From now on, I want to perform this task without using a wizard**.
12. Click **Next**.
13. In the **Server** field, type the name of the single-host or Database Server and click **OK**.
14. Select **Use SQL Server authentication**. Use **sa** as the account, and the password returned typing **C:\mvf\bin\passkey -M QUERY -u sa** and pressing **Enter**.

7. Configuring the Audit Record Repository database connection

After installing or upgrading the database and adding an Audit Record Repository (an audit server such as Audit Manager), you must update certain entries in the database to ensure that auditing functions correctly. If not using an Audit Record Repository, this task is not required.

Perform this task on the Database Server.

To configure the Audit Record Repository database connection

1. In Windows, at a command prompt, type:
`cd \mvf\bin`
 In Solaris, in a terminal window, type:
`cd usr/mvf/bin`
2. Type **clui**.
3. To check if the entry already exists in the database, type:
`select * from map_ini where ini_key='ARR_INSTALLED' and ini_section='MAP_EVENT'`
4. If the entry exists, update the entry it as by typing:
`update map_ini set ini_value='T' where ini_key='ARR_INSTALLED' and ini_section='MAP_EVENT'`
 or
 If the entry does not exist, insert it by typing:
`insert into map_ini (ini_section,ini_key,ini_value) values ('MAP_EVENT','ARR_INSTALLED','T')`

The Application Server must also be connected to the Audit Record Repository. Refer to *Connecting to an audit server* in the IMPAX 6.3 Application Server Configuration Guide.

Installing IMPAX on the Archive Server

6

The steps required to install and initially set up IMPAX on an AS300 Archive Server are somewhat different from those required for a single-host or multi-host Database Server or a dedicated Network Gateway. Before proceeding with the Archive Server installation, ensure that the system has been readied as outlined in *Installing hardware and software on an AS300 server* (refer to page 26).

1. Prerequisites to IMPAX Server installation

Before installing IMPAX Server:

- Install all external software listed in *Installing hardware and software on an AS300 server* (refer to page 26). If MVFSqlServer is selected in the Default Packages group and SQLServer is not on the workstation, the installation exits and does not complete.
- Ensure that you have properly renamed the mvf and mvf archive license files. The license keys initial name is the machine's MAC address with a .lic. extension. Rename the mvf licence file to **mvf.lic**, and the mvf archive licence key to **mvfarch.lic**. The installation script copies them under C:\mvf.



CAUTION!

Keep a backup copy of the license key files in a directory other than C:\mvf. If the IMPAX software is uninstalled, all files are deleted from the C:\mvf directory.

2. Installing IMPAX Archive Server packages

Use the IMPAX installer to install the necessary packages on the system.

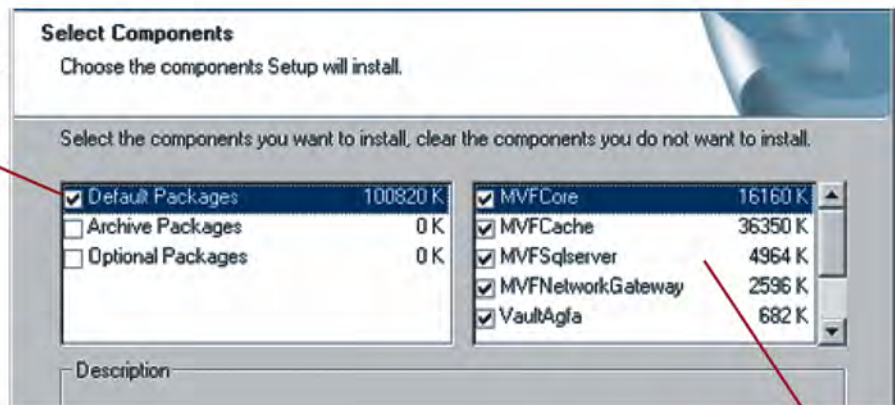
To install the IMPAX packages

1. Log in as a Windows administrator.
2. Insert the IMPAX AS300 CD into the CD-ROM drive.
3. Navigate to D:\programs\mvf and double-click **as300-installer.exe**.
4. Type your name (minimum three characters).

This information is recorded in the installer log file.

5. In the Welcome dialog, click **Next**.
6. In the Select Components dialog, all default packages are selected (as shown in the figure that follows). Clear the checkboxes of any packages that should not be installed.

Default Packages are already selected



Clear the checkboxes of any default packages that are not required.

7. Select the **Archive Packages** checkbox.
8. Select the **Optional Packages** label, then select the checkboxes of any optional packages that should be installed.



Note:

In particular, if installing Curator on the same machine as the Archive Server, select MVFCurator now.

9. Browse to the location of the MVF licence file and click **OK**.
If the mvf.lic file is not located in C:\mvf, the file is copied to that location. A dialog informs you of the success of the copy task.
10. Browse to the location of the MVF archive licence file and click **OK**.
If the mvfarch.lic file is not located in C:\mvf, the file is copied to that location. A dialog informs you of the success of the copy task.
11. Browse to the location of the portable password file and click **OK**.
12. Type the temporary password used to create the portable password file and click **OK**.

The mvf.psd file is imported under C:\mvf.

13. In the Summary dialog, to continue the installation, click **Next**.

The files are copied.

14. If you are using a jukebox CD-R or DVD-R archive, the Veritas Px Engine is installed. This engine must be installed to burn to DVD. Follow the prompts in the Veritas Px Engine Setup. When prompted to restart the computer after the engine is installed, click **No**.



CAUTION!

The IMPAX installation does not complete successfully if you restart the system at this time. The system must only be restarted after all packages are installed and the database scripts have been run.

To ensure that all services are restarted correctly, always restart the computer.

15. After all the packages have been installed, to close the installation dialog and reboot the system, click **Yes, I want to restart my computer now**.

If you are not prompted to restart your computer, manually restart the computer by selecting **Start > Shut Down**. In the Shut Down Windows dialog, from the list, select **Restart** and click **OK**.

3. Checking subpackage installations

The packages installed by the IMPAX installer use response files and the mitra_install.log file to monitor the success of the installations. Refer to these files to determine if the installations were successful.

To check the response code of installed packages

1. Check the log files located in C:\mvf\data\install.

Each package has its own log file. For a clean installation of a sub-package, the ResultCode is zero. Any other number indicates a failure.



Note:

The packages installed using the installer are not visible in Add/Remove Programs.

To check the status of installed packages

1. Check the log file C:\mvf\data\logs\mitra_install.log.

The installation details for each installed package are listed.

4. Restarting the system

This topic applies only if you are upgrading from a single-host configuration to a multi-host configuration.

Restart the computer to restart the services. Restart the halted transmit and archive queues.



Note:

Always restart the system before returning IMPAX to active service and ensure that any antivirus services are restarted.

Installing IMPAX on the Network Gateway

7

The steps required to install and initially set up IMPAX on a dedicated Network Gateway server are somewhat different than those required when installing the Network Gateway on another server. Before proceeding with the installation, ensure that the system has been readied as outlined in *Installing hardware and software on an AS300 server* (refer to page 26).

1. Prerequisites to IMPAX Server installation

Before installing IMPAX Server:

- Install all external software listed in *Installing hardware and software on an AS300 server* (refer to page 26). If MVFSqlserver is selected in the Default Packages group and SQLServer is not on the workstation, the installation exits and does not complete.
- Ensure that you have properly renamed the mvf and mvf archive license files. The license keys initial name is the machine's MAC address with a .lic. extension. Rename the mvf licence file to **mvf.lic**, and the mvf archive licence key to **mvfarch.lic**. The installation script copies them under C:\mvf.



CAUTION!

Keep a backup copy of the license key files in a directory other than C:\mvf. If the IMPAX software is uninstalled, all files are deleted from the C:\mvf directory.

2. Installing IMPAX Network Gateway packages

Use the IMPAX installer to install the necessary packages on the system.

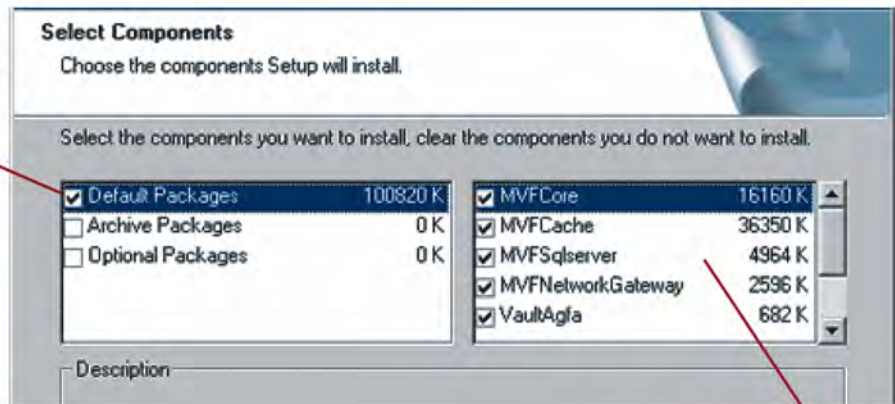
To install the IMPAX packages

1. Log in as a Windows administrator.
2. Insert the IMPAX AS300 CD into the CD-ROM drive.
3. Navigate to D:\programs\mvf and double-click **as300-installer.exe**.
4. Type your name (minimum three characters).

This information is recorded in the installer log file.

5. In the Welcome dialog, click **Next**.
6. In the Select Components dialog, all default packages are selected (as shown in the figure that follows). Clear the checkboxes of any packages that should not be installed.

Default
Packages
are already
selected



Clear the checkboxes of
any default packages that
are not required.

7. Clear the **Archive Packages** checkbox.
8. Select the **Optional Packages** label, then select the checkboxes of any optional packages that should be installed.
9. Browse to the location of the MVF licence file and click **OK**.
If the mvf.lic file is not located in C:\mvf, the file is copied to that location. A dialog informs you of the success of the copy task.
10. Browse to the location of the portable password file and click **OK**.
11. Type the temporary password used to create the portable password file and click **OK**.
The mvf.psd file is imported under C:\mvf.
12. To continue the installation, in the Summary dialog, click **Next**.
The files are copied.
To ensure that all services are restarted correctly, always restart the computer.
13. After all the packages have been installed, to close the installation dialog and reboot the system, click **Yes, I want to restart my computer now**.

If you are not prompted to restart your computer, manually restart the computer by selecting **Start > Shut Down**. In the Shut Down Windows dialog, from the list, select **Restart** and click **OK**.

3. Checking subpackage installations

The packages installed by the IMPAX installer use response files and the mitra_install.log file to monitor the success of the installations. Refer to these files to determine if the installations were successful.

To check the response code of installed packages

1. Check the log files located in C:\mvf\data\install.

Each package has its own log file. For a clean installation of a sub-package, the ResultCode is zero. Any other number indicates a failure.



Note:

The packages installed using the installer are not visible in Add/Remove Programs.

To check the status of installed packages

1. Check the log file C:\mvf\data\logs\mitra_install.log.

The installation details for each installed package are listed.

4. Restarting the system

This topic applies only if you are upgrading from a single-host configuration to a multi-host configuration.

Restart the computer to restart the services. Restart the halted transmit and archive queues.



Note:

Always restart the system before returning IMPAX to active service and ensure that any antivirus services are restarted.

Completing the installation of IMPAX on an AS300 server

After the installation and preliminary setup of IMPAX on an AS300 server, whether in a single-host, multi-host, or mixed-host configuration, additional procedures are required.

1. Changing the SQL Server administrator (sa) password

This topic applies only to a single-host server (including standalone and single-server configurations) and to the Database Server in a multi-host configuration.

The IMPAX installation changes the default sa password to a randomly generated string of characters. This greatly increases the security of the system; however, the password can still be obtained through other methods.

To ensure that your system is as secure as possible, we recommend updating the sa password to a password that is known only by the site administrator.



Note:

Do this only after the Application Server software has been installed and configured.

To ensure that the password is as secure as possible:

- The password must be at least eight characters long.
- The password must contain characters from at least three of the following five categories:
 - Uppercase characters (A to Z)
 - Lowercase characters (a to z)
 - Digits (0 to 9)

- Non-alphanumeric characters (for example, !, \$, #, or %); avoid commas
- Unicode characters

To update the SQL Server password

1. Log into Windows using the AgfaService account.
2. To find out what the current sa password is, at a command prompt, type:

```
cd \mvf\bin
passkey -M QUERY -u sa -r c:\mvf\mvf.psd
```
3. To update the password, type the following commands, pressing **Enter** between the commands:

```
isql -U sa -P <password from step 2> -d master
sp_password NULL, ' <new password>', 'sa'
go
```

A message indicates that the password was changed.
4. To log out of isql, type **exit**.

2. Configuring Data Execution Prevention (DEP)

This topic applies only when upgrading from IMPAX 5.2 server or installing a new server.

Data Execution Prevention (DEP) is on by default for all programs. DEP is designed to help prevent damage from viruses and other security threats by marking some memory locations “non-executable” so that malicious code cannot be executed from memory locations that only Windows and other programs should use. This increased security, however, can cause problems with some programs that require this memory space, including IMPAX. If DEP remains on, you may encounter problems with Curator, ddo_store, or CD burns, among other features.



Note:

To successfully configure DEP, the directory C:\mvf\bin must first exist. Also, not every executable listed in step 6 that follows may appear in the directory.

To configure DEP

1. Right-click **My Computer** and select **Properties**.
2. Switch to the **Advanced** tab.
3. Under Performance, click **Settings**.
4. Switch to the **Data Execution Prevention** tab.
5. In the Performance Options dialog, select **Turn on DEP for all programs and services except those I select**.
6. For each IMPAX executable in the list that follows, click **Add**, navigate to C:\mvf\bin, select the executable, and click **Open**:

- curator.exe
- ddo_create.exe
- ddo_store.exe
- mvf_scp.exe
- mvf_scu.exe
- mvf_compressor.exe
- mvf_autopilot.exe

7. Close all open dialogs.

8. Restart the system.

3. Installing server license keys on a new server

If you have not already installed the appropriate license keys on the servers, do so now. MVF license keys must be installed on each single-host and Network Gateway station. Archive license keys must be installed on each single-host and Archive Server station.

If you do not have license keys, you must obtain them from the Agfa Account Manager for each machine on the system. For more information, including details about obtaining the MAC address, refer to *Obtaining Server license keys* (refer to page 46).

Installing the mvf license key

Ensure that you have obtained the mvf license key for the server from Agfa.

To install the mvf license key

1. Match up the correct license key with the machine's MAC address.
The license key name is the MAC address with a .lic file extension.
2. Select **Start > All Programs > Accessories > Windows Explorer**.
3. Copy the license key file to **C:\mvf**.
4. Rename the license key file to **mvf.lic**.

Installing the archive license key

Ensure that you have obtained the archive license key for the server from Agfa.

Using PACS Store and Remember archiving (or any other type of archiving) requires an archive license key. If you have not already installed on the server, do so now.

To install the archive license key

1. Match up the correct license key with the server's MAC address.
The license key name is the MAC address with a .lic file extension.
2. Select **Start > All Programs > Accessories > Windows Explorer**.
3. Copy the archive license key to the C:\mvf directory on the hard drive.
4. Rename the license key to **mvfarch.lic**.

4. Installing the Application Server

Before configuring IMPAX Server, install the Application Server software. Refer to the *IMPAX 6.3 Application Server Installation Guide*.

5. Configuring IMPAX Server

After the Application Server is installed, complete the configuration of IMPAX Server software. Refer to the *IMPAX 6.3 AS300 Configuration Guide*.

6. Installing the IMPAX Server documentation

The IMPAX Server documentation is located on the IMPAX Documentation CD. You install it on an IMPAX Application Server, not on any of the AS300 or AS3000 servers. Refer to *Installing the IMPAX documentation* in Chapter 3 of the *IMPAX 6.3 Application Server Installation and Upgrade Guide*.

7. Installing and configuring Curator

If you installed Curator on an AS300 single-host server, Archive Server, or Network Gateway machine, configure Curator after installing the Application Server and performing its initial configuration. Refer to "Configuring Curator INI settings" in Chapter 2 of the *IMPAX 6.3 AS300 Configuration Guide*.

If you are installing Curator on a separate machine, or on multiple machines in a master-slave configuration, do this after installing the Application Server and performing its initial configuration, as well as after configuring all the other IMPAX Server components. Refer to the *IMPAX 6.3 Curator and CD Export Server Installation Guide*.

Preparing to upgrade from a single-host to multi-host configuration

You must perform certain pre-upgrade steps before upgrading from a single-host configuration to a multi-host configuration.

1. Overall order of upgrade procedures

1. Perform the pre-upgrade procedures in the order that they are listed in *Preparing to upgrade from a single-host to multi-host configuration* (refer to page 69).
2. Install hardware and software on the new Database Server. Refer to *Installing hardware and software on an AS300 server* (refer to page 26).
3. Install IMPAX 6.3 on the new Database 6.3 including restoring the database and MVF services. Refer to *Installing IMPAX on a dedicated AS300 Database Server* (refer to page 52).
4. Install the IMPAX Archive Server packages on the original server. Refer to *Installing IMPAX on the Archive Server* (refer to page 58).
5. If required, install hardware and software on the dedicated Network Gateway server. Refer to *Installing hardware and software on an AS300 server* (refer to page 26).
6. If required, install the IMPAX Network Gateway packages. Refer to *Installing IMPAX on the Network Gateway* (refer to page 62).

2. Performing the pre-upgrade check

To ensure that any abnormalities in the system are not moved forward with the upgrade, before proceeding with the upgrade, examine the log files for abnormal behavior that may require intervention. The log files are located in C:\mvf\data\logs.

3. Stopping the transmit queue



Allow remaining jobs to continue until they have finished, then prevent any more jobs from being processed.



Tip:

Jobs in progress cannot be deleted.




To stop the transmit queue

1. Launch the Administration Tools and log in as user **service**.
2. Switch to the **Daily** tab.
3. Click **Job Manager**. 
4. Monitor each Transmit queue and wait for all outgoing jobs to finish.
5. Select each Transmit queue and click **Halt**. 
6. To confirm that you want to halt the queue, click **Yes**.

4. Archive remaining unarchived studies


This topic applies only to an Archive Server, or to the Archive component of a single-host server.
Before archiving studies, verify all unverified studies.




To verify unverified studies

1. In the Administration Tools, on the Daily tab, click **Study Manager**. 
2. From the location list, select **Failed Verification**.
3. Set other search criteria to **Any** value.
4. Click **Refresh**. 
5. In the search results, select all studies.
6. To fix up the studies that have failed HISverification, click **Fix All Studies**. 
7. In the Fix All Results dialog, review the results of the attempt to fix the studies presented.

When no studies are returned by the Failed verification query, archive all remaining studies.

To store unarchived studies

1. In the Administration Tools, on the Daily tab, click **Study Manager**. 
2. From the location list, select **Cached** (or another value that will return the unarchived studies).
3. Set other search criteria to **Any** value (or set to appropriate values).

4. Click **Refresh**. 
5. In the search results, select the studies to archive.
The Location column indicates which studies are only in cache (C for cache) and not also in an archive location (such as P for PACS archive).
6. Click **Store to Archive**. 
7. To update the status of the selected studies, click **Refresh**. 
8. Ensure that all studies are archived.

5. Closing and mirroring archive volumes



Close all open primary volumes before upgrading. Open mirror volumes are closed automatically when a SYNC job completes successfully with the corresponding closed primary volume. Fresh volumes may remain open as they do not contain any studies.

If the system has a jukeboxarchive, you may have to wait for the sync job to finish. If the system is a non-jukebox archive, you should perform a mirror procedure manually, where applicable, to ensure that a backup of the data exists.

6. Emptying all queues

Monitor the Job Manager to make sure that all the queues are empty and that all jobs are completed prior to migration.


To empty all queues

1. In the Administration Tools, on the Daily tab, select **Job Manager**.
2. If an archive job remains in any of the queues, select the job and click **Expedite Selected Job(s)**.

3. If any other job remains in any of the queues, select the job and click **Delete selected job(s)**. 

7. Halting the archive queue

When all archive jobs have been successfully handled, halt the Archive queue to stop studies from moving around the system.

To halt the archive queue

1. In the Administration Tools, on the Daily tab, select **Job Manager**.
2. In the queue list, select the archive queue.
3. Click **Halt Queue**. 
4. To confirm that you want to halt the queue, click **Yes**.

8. Deleting cache locations for studies

If you are restaging the server and are not restoring the files in the cache directory after the upgrade, to prevent database inconsistencies, remove all database references to images in cache. To do this, find all study_refs that are in the cache and delete them.



Note:

Images in the cache are archived and, if necessary, can be retrieved after the upgrade is complete.

To remove database references to cache locations

1. To obtain the volume_ref of the cache and the list of study_refs, in clui, type **cache query**.
A list of caches and their volume_refs is displayed.
2. To store all study_refs into a variable *a*, type:
save_refs a select distinct ds.study_ref from dosr_study ds, dosr_object do where ds.study_ref = do.study_ref and do.object_ref in (select object_ref from osr_location where volume_ref = < volume_ref >)
where <volume_ref> is the volume_ref of the cache.
3. To enter menu mode, type **Go menu**.
4. Select **Study Manager**.
5. Select **Delete Studies Menu**.
6. Select **Delete Study from Cache**.
7. To process the study_refs stored in the variable *a*, at the command prompt, type **a**.
All studies in the volume_ref's cache are removed.
8. Back up the database.
Specify this backup when restoring the database on the new Database Server.

9. Stopping antivirus software

If you have antivirus software installed on the station, ensure that no scan jobs are running that would interfere with the migration process. Stop the antivirus services.

To stop any scan jobs

1. Launch the antivirus software and halt the scan operation according to the vendor's instructions.

10. Performing a database check

Before you do the upgrade, perform a database check for the following:

- Allocation and structural integrity of all the objects in the MVF database
- Consistency of disk space allocation structures for MVF database
- Consistency in and between system tables in the MVF database

To perform the database check

1. In the SQL Server Query Analyzer window, type the following, pressing **Enter** between each command:

```
DBCC CHECKDB
```

```
GO
```

```
DBCC CHECKALLOC
```

```
GO
```

```
DBCC CHECKCATALOG('MVF')
```

```
GO
```

2. Click **Execute**. ▶

Check the results and make sure the error is 0.

11. Backing up the database

Create a backup of the database before upgrading the system. If you are backing up the database from the command line, you must be in the SQL environment to run the backup command.

After the backup is complete, if you performed a backup to disk, copy the backup file to another location on the network. If you performed a backup to tape, remove the tape from the drive.

To back up a database using the Enterprise Manager

1. Select **Start > All Programs > Microsoft SQL Server > Enterprise Manager**.
2. In the Explorer window of the Enterprise Manager, expand **Console Root > Microsoft SQL Servers > SQL Server Group > <server> > Databases > <database name>**
where *<server>* is the name of the SQL Server that the program is running under and *<database name>* is the name of the database to be backed up.
3. Select **Action > All Tasks > Backup database**.
4. Configure the **General** and **Options** tabs according to your preferences for items such as the type of backup, the destination, and whether to overwrite or append to the media.
Ensure that the **Verify upon completion** option is selected.
5. To start the backup, click **OK**.
6. Exit the SQL Server Enterprise Manager.

To back up the database from the command line

1. At a command prompt, type:

isql -u <user_name> -p <password> -dmaster

2. To back up the database, type:

backup database <database_name> to <device_name>

where <database_name> is the name of the database you want to back up and <device_name> is the logical or physical name of the tape/disk device.

12. Saving system configuration information

Save the system configuration to a safe location on the network.

To save the system configuration

1. Open a command prompt.
2. To save the IP configuration and ethernet adaptor information to the network location, type:
ipconfig /all > <drive letter>:ipconfig.txt
3. To save the hostname information to the network location, type:
hostname > <drive letter>:hostname.txt
4. Copy the hosts file located in C:\WINNT\system32\drivers\etc to the network location.
5. Copy the mvf.lic and mvfarchive.lic files to the network location.

13. Deleting old log files

On the server being upgraded, remove any old log files to ensure that all future log information is a result of the migration procedure.

To remove old log files

1. Open a command prompt.
2. Navigate to
C:\mvf\bin\
3. Run **stopall.bat**.
4. Delete all files located in C:\mvf\data\logs\ and any log files located in the log file partition, if one was created.

14. Clearing the Logical Volume



To avoid conflicts when upgrading, clear the Logical Volume. IMPAX will re-create the Logical Volume folders and files afterward.



CAUTION!

Ensure that the Logical Volume is empty before deleting it. If it is not empty, create a store job to archive the images in the Logical Volume.

To clear the Logical Volume

1. In the Administration Tools, switch to the **Setup** tab.
2. Select **Archive Manager**. 
3. Select the Logical Volume and click **Close**. 
4. At the Close Volume prompt, click **Yes**.
5. Ensure that the Archive queue is halted (refer to *Halting the archive queue* (refer to page 71)).
6. Delete the Logical Volume folder and files from the drive.

The Logical Volume folder and files are automatically re-created by IMPAX.

15. Disabling the server

To complete the pre-upgrade procedures, disconnect the server from the network and stop and remove the mvf services.

To disable the server

1. Disconnect the server from the network.
2. If you did not run stopall.bat to delete the old log files, run **stopall.bat**.
3. To remove the mvf services, browse to C:\mvf\bin\ and run **removeall.bat**.

16. Uninstalling and disabling software on the original server

Finally, on the original server, uninstall the IMPAX packages and SQL Server, and disable the associated services.

Uninstalling IMPAX packages

Uninstall the IMPAX packages on the original server. The necessary packages will be reinstalled after.

To uninstall IMPAX

1. Open Control Panel.
2. Select **Add/Remove Programs**.
3. Select **AGFA IMPAX 6.3**.
4. Click **Change/Remove**.

5. In the confirmation dialog, click **OK**.
6. In the Maintenance Complete dialog, select **No, I will restart my computer later** and click **Finish**.
Do not close the Add/Remove Programs dialog.

Uninstalling SQL Server

SQL Server is no longer required on the original server. Remove SQL Server, but do not delete the database partition.

To remove SQL Server

1. In the Add/Remove Programs dialog, select **Microsoft SQL Server 2000**.
2. Click **Change/Remove**.
3. In the confirmation dialog, click **OK**.
4. In the finish dialog, click **OK**.
5. If you are not prompted to restart your computer, manually restart the computer by selecting **Start > Shut Down**. In the Shut Down Windows dialog, from the list, select **Restart** and click **OK**.

Disabling IIS

To disable IIS

1. Open Control Panel.
2. Select **Start > All Programs > Administrative Tools > Services**.
3. In the Services dialog, right-click **FTP Publishing Service**.
4. Select **Properties**.
5. Click **Stop**.
6. From the **Startup type** list, select **Disabled**.
7. Click **Apply**.
8. Click **OK**.
9. Repeat steps 4 to 9 for the **IIS Admin Service** and **World Wide Web Publishing Service**.

Disabling the archive changer in Windows

To allow the system to operate correctly, disable the archive changer in the Window Device Manager. The IMPAX software accesses the device directly and does not require that it be enabled in Windows. If the changer is not disabled, other applications may try to access the device and may interfere with IMPAX.

Disable only the archive changer and leave all other devices, such as the archive drives and DAT drives used for database backups, enabled.



Note:

Complete any alterations or reconfigurations of the SCSI chain before disabling the changer. If the changer is disabled first and then the SCSI chain is reconfigured or altered, the Windows Device Manager automatically re-enables any disabled devices. If the SCSI chain must be altered or reconfigured, after the changes are complete, restart the computer and use the Windows Device Manager to disable the changer again.

For more information on the Device Manager and disabling devices, refer to the Microsoft online help.

Enabling auto play

Autoplay should be enabled by default. However, if it is not, you must enable it to avoid problems between IMPAX and archive devices.

1. Select **Start > Run**.
2. In the **Open** field, type **regedit** and click **OK**.
3. In the Registry Editor dialog, expand **HKEY_LOCAL_MACHINE > SYSTEM > CurrentControlSet > Services** and select **Cdrom**.
4. Ensure that the value of **AutoRun** is **1**. If it is not, change the value to **1**.
5. Close the Registry Editor dialog.
6. To run the Group Policy Management Console, select **Start > Run**.
7. In the **Open** field, type **gpedit.msc** and click **OK**.
8. In the Group Policy dialog, expand **Computer Configuration > Administrative Templates**.
9. Click **System**.
10. Double-click **Turn off Autoplay**.
11. Ensure that the **Not Configured** option is selected.
12. Close the Group Policy dialog.
13. If you made any changes in the registry or Group Management Console, restart the computer.

17. Continuing the upgrade

You can now proceed to install the hardware and software on the new Database Server. Refer to *Installing hardware and software on an AS300 server* (refer to page 26).

As you install or upgrade IMPAX servers, you may encounter various installation and configuration problems.

Server name registered in SQL Server is incorrect

Issue

If the server name registered in SQL Server is not the same as the server name registered in Windows, you must update the server name in SQL Server.

Details

This discrepancy may happen if you use a ghost image when installing the third-party applications.

Solution

To check the server name registered in Windows

1. Right-click **My Computer** and select **Properties**.
2. Switch to the **Computer Name** tab.

The server name is listed as the Full server name.

To check the server name registered in SQL Server

1. In the SQL Server Query Analyzer, type **select @@servername**

To update the server name registered in SQL Server

1. In the SQL Server Query Analyzer, type:
sp_dropserver <old server name>

```
go
sp_addserver <server name as in Windows> , local
go
```

MVF database software encountered errors during installation

Issue

The IMPAX MVF database software installation instructions ask you to look for errors when installing packages. In doing so, you find some.

Solution

If an error occurs while installing the MVF database, reinstall the database package:

1. Determine if the security package was applied as per the instructions that follow.
2. Rebuild the IMPAX database as per the instructions that follow.

To determine if the security package was applied

1. Log into Windows as an administrator.
2. At a command prompt, type **isql -E**.

If this fails, the security package has been installed. If the security package was not applied, follow the installation instructions.

To rebuild the database

1. Log into Windows as an administrator.
2. Select **Start > All Programs > Microsoft SQL Server**.
3. Right-click **Enterprise Manager** and select **Run as**.
4. In the Run as dialog, select **The following user**.
5. From the **User name** list, select **AgfaService**.
6. In the **Password** field, type the password for the AgfaService account and click **OK**.

The SQL Server Enterprise Manager is opened using the AgfaService account permissions.

7. In the Explorer window of the Enterprise Manager, expand **Console > Microsoft SQL Servers > SQL Server Group > <server> > Databases**.
8. Right-click the MVF database and select **Delete**.
9. To confirm the deletion of the database, click **Yes**.
10. Run the build-mvf-sqlserver-database script.



Note:

If you receive an error a second time, contact your vendor.

Cannot connect to the Administration Tools

Issues

You cannot log into the Administration Tools.

Details

Two possibilities exist for this problem:

- The Administration Tools service can encounter problems when you first attempt to log in.
- The IMPAX Server tries to communicate with the Administration Tools over the default port range of 1200-1270. If these ports are used up, the Server cannot reach the Administration Tools.

Solutions

If the login screen fails when it reaches 88%, this indicates a service problem. Stop and restart the Administration Tools service.

To stop and restart the Administration Tools service

1. On Windows 2003, select **Start > All Programs > Administrative Tools > Services**.
On Windows XP, open Control Panel and select **Administrative Tools**. Select **Services**.
2. Right-click **Administration Tools Server service** and select **Restart**.

If ports 1200–1270 are used up, modify the default range to use a range that is available.

To modify the default port range

1. To determine which ports are in use, at a command prompt, type **netstat -a**.
2. Ports within the 1200-1270 range with a state of LISTENING do not have to be modified. If you find that the ports within that range do not have a state of LISTENING:
 - a. In a text editor, open C:\mvf\java\etc\jserver.properties.
 - b. Search for `jmtk.rmiPortRange=1200-1270`.
 - c. Modify the range to suit the needs of the site.
 - d. Save the modified file.

Server license keys do not work

Issue

Programs do not start because of Server license key problems.

Details

Server license keys can present problems if they are not stored in the correct directory or are not matched to the MAC addresses of the machines. To function properly, the correct number of license keys must be located in the correct directory.

Solution

Ensure that the appropriate license keys are installed in the correct location. For information on obtaining a MAC address, refer to *Obtaining Server license keys* (refer to page 46).



CAUTION!

Because you may be installing the mvf and archive licenses on the same station, to prevent the mvf license key from being overwritten, ensure that you rename the mvf license key before copying the archive license key into the mvf directory.

To install the mvf license key

1. Match up the correct license key with the machine's MAC address.
The license key name is the MAC address with a .lic file extension.
2. Select **Start > All Programs > Accessories > Windows Explorer**.
3. Copy the license key file to the mvf directory on the hard drive.
4. Rename the license key file to **mvf.lic**.

To install the archive license key

1. Match up the correct license key with the Archive Server's MAC address.
The license key name is the MAC address with a .lic file extension.
2. Select **Start > All Programs > Accessories > Windows Explorer**.
3. Copy the archive license key file to the mvf directory on the hard drive.
4. Rename the license key file to **mvfarch.lic**.

Installation of IMPAX software unsuccessful: Must reinstall packages

Issue

IMPAX Server was not installed successfully.

Problem

If the IMPAX Server software installation was not successful, you may have to uninstall the IMPAX software and retry the IMPAX installation.

Solution

Before retrying the installation, attempt to determine why the installation failed and correct the problem, if possible. You can find specific error messages and more information on the installation in these log files:

- C:\mvf\data\logs\mitra_install.log
- C:\mvf\data\logs\SystemInfo.log
- C:\mvf\data\logs\build_mvf.log

After the problem is determined and resolved, reinstalling the IMPAX software requires four steps:

1. Restart the system as indicated by the installer, even if failures have occurred.
2. Determine if the security package was applied.

If the installation failed after the security package was applied, you must log in using the AgfaService account to reinstall the IMPAX software. If the installation failed before the security package was applied, you must log in as a Windows administrator to reinstall the IMPAX software. Refer to the instructions that follow.

3. Uninstall the IMPAX software.
4. Install the IMPAX packages again, using the correct user account.

To determine if the security package was applied

1. Log into Windows as a Windows administrator.
2. At a command prompt, type **isql -E**.

If this fails, the security package has been installed and you must uninstall and reinstall the IMPAX software using the AgfaService user.

To uninstall the IMPAX software

1. Open Control Panel.
2. Select **Add/Remove Programs**.
3. In the Windows Add/Remove Programs dialog, select **AGFA IMPAX 6.3**.
4. Click **Change/Remove**.
5. At the prompt, type your name and click **Next**.
6. In the confirmation dialog, click **OK**.
7. In the Maintenance Complete dialog, select **Yes, I want to restart my computer now** and click **Finish**.

Archive and security considerations

B

If you are using an Oracle Database Server on a Solaris host (in a mixed-host configuration), also refer to the *Appendixes* of the *IMPAX 6.3 AS3000 Installation and Configuration Guide*.

Types of archives

A jukebox archive has one or more drives where media is loaded, multiple slots that hold the media for easy storage retrieval, and a robotic changer to move media around within the jukebox.



Tip:

For more details on archive functionality, refer to the Archive Server component of the *IMPAX 6.3 Server Knowledge Base*.

Supported archive configurations:

- CD-R (Compact Disk Recordable)
- DVD-R (Digital Versatile Disk Recordable)
- HSM (Hierarchical Storage Management)
- PACS Store and Remember

If you are using a jukebox archive, it must be enabled and configured to make a connection with IMPAX. Install the archive according to the manufacturer's instructions.

After following the manufacturer's instructions for setup, ensure that the archive is left powered on. During the next system restart, the IMPAX system automatically detects the archive and establishes a connection.

CD-R and DVD-R

CD-R is a small, portable, round medium used to store information in digital form. DVD-R can store much more information than CD-R using the optical disk technology.

CD-R and DVD-R archives use logical volumes. Logical volumes are valid archive locations independent of cache and media. They are not intermediate data structures used for staging data prior to burn and they cannot be manually deleted without risk of permanent data loss.

HSM archive

The HSM archive system provides long-term storage of data and access to data. Studies archived with HSM are stored to a file system. A mount point and subdirectory to store studies to is specified. The HSM system takes care of storing the data.

Before storing or retrieving data, ensure that the mounted location is set up properly and is ready for storage and retrieval of files.

PACS Store and Remember

A PACS Store and Remember archive is an IMPAX Server computer that acts as an Archive Server, where the images are stored on a PACS archive external to the IMPAX system. Any IMPAX Server computer with a cache that is not currently an Archive Server can be set up as a Store and Remember archive. The PACS Store and Remember archive is aware of the studies that exist on the external archive, but is not aware of precisely where on the external archive these studies are stored. The external archive takes full responsibility for permanently archiving studies.

PACS Store and Remember archiving works the same way as other archiving. You configure the archiving based on the station, Autopilot creates STORE jobs based on the archiving settings, and studies can be retrieved via RETRIEVE jobs. A PACS Store and Remember queue is a DRIVE queue that is managed like any other DRIVE queue in the Administration Tools.

The difference between PACS Store and Remember archiving and media-based archiving is that the mvf-scu process handles the archiving, instead of a separate archive process. Also, a STORE job is done via DICOM C-Store, and a RETRIEVE job is done via DICOM C-Move.

Armoring Windows-based IMPAX systems

To ensure that the IMPAX system is as secure as possible without affecting the functionality of the system, during the IMPAX installation and armoring procedure:

- All unnecessary services and applications are disabled.
- Insecure network services are disabled.
- The ODBC tracing executable is disabled. Disabling this executable ensures that user names and passwords are always encrypted in the trace log.
- Optional services and applications are not installed, unless they are required.

- All IMPAX services are configured to run under restricted user accounts that can access only the resources they need. These accounts are created during the IMPAX installation.
- To ensure that the SQL database account used for access does not have administrative privileges, access to dangerous and unnecessary extended stored procedures is removed or disabled. Limiting the privileges of the account reduces the risk of SQL injection attacks or exposure to other database vulnerabilities. For each extended stored procedure that must be armored, the armoring script denies the execute permission for the SQL Server account used by IMPAX (mvf).
- IPSEC policy filters are created and applied to block external access to unused ports. The intent is to block ports that are not in use and where insecure services could reside if accidentally configured and started. As DICOM devices are added to the system, the IPSEC filters are adjusted to allow communication to these external devices. These filters are listed in the local security policy as dynamic filters.



Tip:

For more information on security, including the list of services disabled by the IMPAX installation and the security policies applied, refer to the Administration Tools component of the *IMPAX 6.3 Server Knowledge Base*.

Groups and accounts created for IMPAX

During the IMPAX installation, the ImpaxServerGroup group is created and the list of files and registry keys that this group has full access to is configured. The Administrators group is automatically created by Windows; however, the list of files and registry keys that this group has access to is modified during the IMPAX installation.

The following accounts are created by the IMPAX installation program. The ImpaxAdminUser account is created only if you are using a jukebox or non-jukebox archive.

Account	Groups they belong to	Services that run under the account
ImpaxSQLUser	<ul style="list-style-type: none"> • ImpaxServerGroup • Backup Operators (for tape access, if required) 	<ul style="list-style-type: none"> • MSSQLSERVER • SQLSERVERAGENT
ImpaxAdminUser	<ul style="list-style-type: none"> • Administrators • ImpaxServerGroup 	<ul style="list-style-type: none"> • mvf-sdrive • mvf-archive
ImpaxServerUser	<ul style="list-style-type: none"> • ImpaxServerGroup 	<ul style="list-style-type: none"> • All IMPAX services except Task Scheduler and those services that communicate with a tape device • Task Scheduler runs under the Local System account

Account	Groups they belong to	Services that run under the account
AgfaService	<ul style="list-style-type: none"> Administrators 	<ul style="list-style-type: none"> Administrator account used by Agfa support

For a service on one machine in a network to access the resources (files, folders, and registry keys) that it needs on another machine in the network, a user account with the same user ID and password must be created on each machine. The user IDs and passwords are maintained in an encrypted password file on the Database Server.



Tip:

For a list of the files and registry keys these groups have access to, refer to the Administration Tools component of the *IMPAX 6.3 Server Knowledge Base*.

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IMPAX 6.3

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Glossary

A

APIP

Agfa PACS Interface Protocol.

Application Server

Intermediary server between IMPAX Client and IMPAX Server machines. LDAP, Documentation, and other Business Services reside on the Application Server.

archive

A physical device for long-term storage and retrieval, such as DVD-R, DLT, or MOD. An archive can be set up in a jukebox or non-jukebox configuration. The archive is attached to the Archive Server.

Archive Server

The IMPAX server that manages the archive. The Archive Server handles requests to store studies to the archive and to retrieve studies from the archive. The Archive Server stores studies in its cache before archiving them to long-term storage.

Autopilot

Service that removes old and expired data when the cache starts to get full. This maintenance function keeps the database to a manageable size.

B

back up

The activity of copying a database so that it will be preserved in case of a software or hardware failure.

browser

Software that allows a user to search through information on a server. The term usually refers to a universal client application, such as Firefox or MS Internet Explorer, that interprets HTML documents.

C

cache

Temporary storage area for data on a computer's local or external hard drives.

CLUI

Command Line User Interface. A command line tool to help in the service of IMPAX. CLUI allows you to execute SQL statements.

C-MOVE

An operation that allows an application entity to instruct another application entity to transfer stored SOP Instances to a third application entity using the C-STORE operation.

compression

Reduces the size of a file to save both file space and transmission time. Lossless, lossy, and wavelet are examples of compression types.

C-STORE

The mechanism used to transfer SOP Instances between application entities.

Curator

Curator is responsible for compressing incoming images into the Mitra Wavelet format and storing them in the web cache. These studies can be accessed by remote or local clients. Multiple instances of Curator can be supported. If more than one Curator is installed, the first Curator instance that is started is considered the master Curator.

D

database

A collection of data that is organized so that its contents can easily be accessed, managed, and updated.

Database Server

Server that hosts the IMPAX (MVF) database. Can be based on SQL (AS300) or Oracle (AS3000).

DICOM

Digital Imaging and Communications in Medicine. The standard communication protocol used by a PACS, HIS, or modality to exchange information or images with other systems.

H

HIS

Hospital Information System. The database used by a hospital to manage patient information and scheduling.

HIS verification

An option that forces the PACS to verify all incoming images from an acquisition station or modality against specific criteria, such as the patient ID and accession number. The PACS sends a message through the RIS Gateway to verify the criteria against what is contained in

the HIS. If the criteria match, then the images can be stored permanently.

hostname

The hostname is a common alphanumeric alias for the IP address of a station.

HSM

Hierarchical Storage Management.

I

IP address

The Internet Protocol address is a numeric address that identifies the station to other TCP/IP devices on the network.

J

JavaScript

A simple, cross-platform, World Wide Web scripting language.

jukebox archive

An archive with one or more drives where media is loaded, with multiple slots that hold the media for easy storage retrieval, and with a robotic changer to move media around within the jukebox.

L

log file

A file or set of files containing a record of the actions and modifications made in an application. Service teams use log files during setup and configuration of the system or its components. Logs are also used to diagnose problems. The level of log file generation typically can be set to record varying degrees of detail.

M

MAC address

Media Access Control address. The unique physical address of each device's network interface card.

master Curator

When using multiple Curators, the first Curator that runs, which owns the job queue.

mirroring

Creates backup copies of all clinical data so that damaged data can be recovered if the original is lost.

multi-host configuration

Server configuration in which the Database is installed on a separate computer from the Archive Server. Network Gateway may be installed on yet another Server, or may be installed along with the Database or Archive Server (or both).

MVF

Mitra Vault Framework.

MVF_SCU

A process that runs on the Network Gateway to handle store and retrieve jobs for the PACS Store and Remember archive.

N**NAS**

Network Attached Storage. A storage device attached directly to a Storage Area Network (SAN) or other direct network connection.

Network Gateway

The Network Gateway is part of the IMPAX cluster and may be housed on its own computer or may share the same computer as the Archive and Database Servers. Essentially this is the workflow manager of the IMPAX system. The Network Gateway controls the studies coming into the cluster from an acquisition station, validates these incoming studies against information from the HIS or RIS, and routes the validated studies to cache or archive.

non-jukebox archive

Functions much like a jukebox archive, except that it has no mailslots or changer. In a non-jukebox archive configuration, a volume is considered to be offline when it leaves the drive, whereas in a jukebox configuration, the volume is considered offline when it leaves the jukebox—either via a mailslot or by manually reaching in the case and retrieving the volume.

O**OCR**

Optical Character Recognition is the recognition of printed or written characters by a computer. If a modality generates images into the system but not enough information about a study is sent, OCR templates read information directly from the burned demographics.

P**PACS**

A Picture Archive and Communication Systems (PACS) makes it possible to electronically store, manage, distribute, and view images.

PACS Store and Remember archive

An IMPAX server computer set up with the PACS Store and Remember archiving functionality. Usually has Network Gateway functionality.

PACS Store and Remember archiving

A configuration in which an IMPAX system is set up as a PACS Store and Remember Archive, and used for archiving studies to an archive external to the IMPAX system.

permissions

Permissions define the available IMPAX features and types of studies that users in a particular role have access to. Permissions are made up of a set of operations.

S

SAN

Storage Area Network. A network of shared storage devices. In a Storage Area Network, all storage devices are available to all servers on a Local Area Network.

SCP

Service Class Provider. A DICOM server that receives requests from an SCU. The DICOM SCP accepts images for processing, processes find and retrieve requests, and handles storage commitment requests and replies.

SCU

Service Class User. Primarily sends DICOM requests to an SCP.

single-host configuration

A configuration in which the Database, Archive Server, and Network Gateway server components are all installed on a single server.

single-server configuration

An IMPAX single server is a Windows server that runs the AS300 Server software in a single-host configuration along with the Application Server and Connectivity Manager software.

slave Curator

When using multiple Curators, the secondary Curators. Though the master Curator owns the job queue, PREPARE jobs are associated with the Curator that started the job.

SSL

Secure Sockets Layer. A protocol from Netscape Communications Corporation, which is designed to provide secure communications on the Internet.

standalone station

Windows server on which the IMPAX Client, AS300, and Application Server software are

installed. Runs under Windows 2003 or Windows XP SP2. The standalone does not have its own installation program. To create a standalone, the AS300, Application Server, and Client installation programs are each run separately.

T

TalkStation

TalkStation is voice recognition software that is integrated with IMPAX 6.3. TalkStation can convert spoken speech to typed text without having to go through a transcription phase.

TCP/IP

Transmission Control Protocol/Internet Protocol. The suite of protocols that defines the Internet. Available for every major operating system.

V

volume

A volume refers to the division of data on the media. If a tape has two sides, each side is referred to as a separate volume.

W

web cache

Images that have been compressed by Curator are stored in the web cache. These images are compressed using Mitra Wavelet compression to reduce their size for access over low bandwidth.

wizard

Wizards are used to automate processes. Wizards perform a predetermined sequence of actions after they are selected and applied.

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